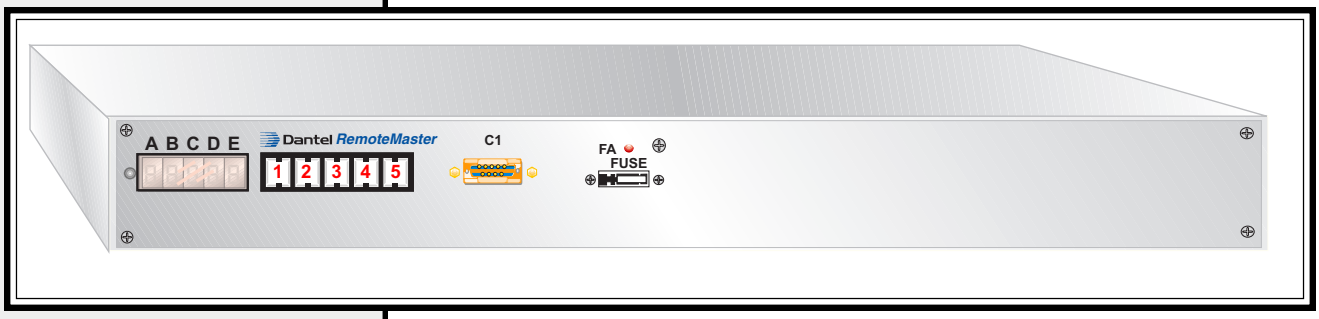
46132-31 REMOTEMASTER (WITH TL1)



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About this Practice:

This practice has been reissued to:

- Emphasize that RS-422 is designed for point-to-point communication and RS-485 is for multipoint communication.

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

UPDATED

Issue date: August 2000

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
B15-46132-31	***TL1 RemoteMaster*; 64 discrete alarm inputs, 16 control outpus, 8 serial (TBOS) alarm interrogator ports, 2 RS-232/422/485 responder ports, 1 RS-232 configuration port, one 202 modem responder port**
A22-46132-02	**TL1 Editor Program (for TL1 RemoteMaster)**
A05-00826-00	**Wall-Mount Brackets**

GENERAL DESCRIPTION

The 46132-31 ***TL1 RemoteMaster*** is a stand-alone unit designed for discrete and serial (TBOS) alarm collection and issuance of controls.

Three responder ports send the information to alarm reporting equipment in a variety protocols: TL1, DCP, DCPF, TBOS, TABS.

NOTE: *The 46132 is a "rear-access" unit; that is, all wiring connections are made at the rear of the unit.*

A front panel LED display shows if there are any alarms or failed TBOS displays.

Before operating the ***TL1 RemoteMaster***, regardless of what protocol is used, it must be configured by connecting a computer to the configuration port. Configuration of the TL1 database is accomplished using the TL1 RemoteMaster Editor program. Refer to the ***Installation*** section. The configuration is backed-up by a battery.

WARNING: *When power is applied to the **TL1 RemoteMaster**, negative battery voltage is present at pins **54** and **56** of connector P2 and at any alarm inputs wired to negative battery. For safety, cover these pins with protective insulation. Keep the plastic cover closed during normal operation.*

CIRCUIT DESCRIPTION

Fig.1 shows the functional schematic for the ***TL1 RemoteMaster.***

DISCRETE ALARM INPUTS

The ***TL1 RemoteMaster*** circuit board has 64 discrete alarm inputs that are optically isolated. Alarms 1-24 and 33-64 each have a single input that requires a ground to activate the alarm circuitry. Alarms 25-32 each have two inputs, one for negative battery and one for positive battery.

TBOS ALARM INPUTS

All options

NEW NOTE

NOTE:
Use RS-422 for point-to-point connections and RS-485 for multi-point connections.

Eight TBOS interrogator ports can poll TBOS equipment for alarm information. Each port can poll up to 8 displays of information for a total of 64 displays on all eight ports. The data interface standard on each port is RS-422/485.

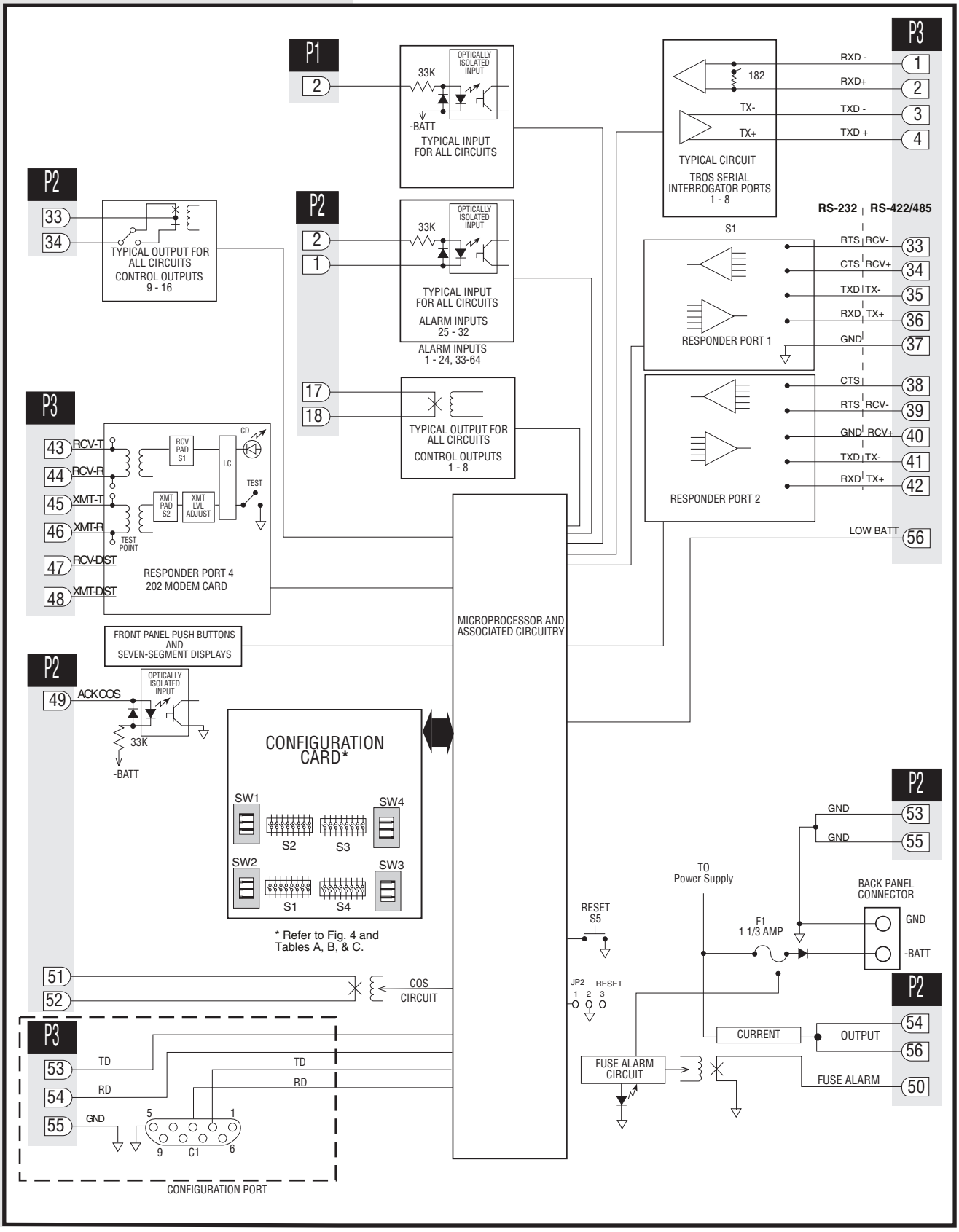
Switches allow optional termination of the receive inputs.

CONTROL OUTPUTS

The ***TL1 RemoteMaster*** circuit board has eight control outputs which each have two pins wired to normally open relay contacts. Eight more control outputs can be set for normally open or normally closed contacts.

CIRCUIT DESCRIPTION

FIG. 1 - FUNCTIONAL SCHEMATIC



NEW NOTE

RESPONDER PORTS

Responder ports send alarm information to alarm reporting equipment.

Ports 1 and 2 can be either an RS-422/485 or RS-232 interface. The RS-422/485 receive input can be terminated with 182 ohms (switch option).

NOTE:
Use RS-422 for point-to-point connections and RS-485 for multi-point connections.

If RS-232 is used on ports 1 or 2, RTS/CTS handshaking can be used. RTS/CTS handshaking enables communication through an external modem on ports 1 and 2.

Port 3 is the configuration port and is not used to report to any alarm center.

Port 4 communicates through a 49013 202 Tone Modem subassembly that plugs into the main circuit board. The modem operates as a Bell 202 full-duplex tone modem. It has a data rate of 1200 baud. The modem provides:

- Test points to measure the transmit and receive signal levels.
- A potentiometer to adjust the transmit level.
- An LED to indicate when the carrier signal is present.

The test points and potentiometer are accessible through a window in the back panel of the ***TL1 RemoteMaster***.

All the responder ports communicate with either TL1, DCP, DCPF, TBOS, or TABS protocol.

CONFIGURATION PORT

To program the ***TL1 RemoteMaster*** to operate, connect a computer running the TL1 RemoteMaster Editor program to the RS-232 configuration port. The computer connects to C1 on the front panel or at P3.

LOCAL ALARM AND ACKNOWLEDGEMENT

Wire external audible or visual devices, such as bells or lights, to the ***TL1 RemoteMaster*** for local alarm monitoring. When there is an alarm, a relay in the change-of-state (COS) circuit operates the device. If the alarm device is operating and another alarm occurs, the relay will pulse once.

Depending on how the ***TL1 RemoteMaster*** has been programmed, the relay returns to its non-alarm state either (1) when all the alarms clear or (2) when a timer expires after 15 minutes. Manually reset the relay either by applying a ground at the ACK COS input or by pushing the front panel acknowledge button.

CIRCUIT DESCRIPTION

PUSH BUTTONS AND LED DISPLAY

On the front panel are five push buttons and five seven-segment LED displays. They:

- Show if there are alarms or failed TBOS displays.
- Show data activity on all active interrogator and responder ports.
- Reset the ***TL1 RemoteMaster***'s microprocessor.
- Acknowledge alarms.
- Indicate alarm location.

WARNING:

When power is applied to the ***TL1 RemoteMaster***, negative battery voltage is present at pins 54 and 56 of connector P2 and at any alarm inputs wired to negative battery. For safety, cover these pins with protective insulation. Keep the plastic cover closed during normal operation.

POWER

The ***TL1 RemoteMaster*** operates on -21 to -56 VDC applied at a connector on the back panel. Power goes through fuse F1 (two amperes) to an on-board power supply. Power also goes to wire-wrap pins 54 and 56 of connector P2. Use pins 54 and 56, which are limited to 15 mA of current, to provide power to alarm inputs 25-32.

If the fuse fails, the fuse alarm (FA) LED on the front panel lights. A relay also operates an external alarm.

INSTALLATION

This section describes those steps necessary to install the ***TL1 RemoteMaster***. These include Switch and Strap Settings, Equipment Mounting, Wiring, Configuration, 202 Modem Checkout, and Troubleshooting.

SWITCH SETTINGS

Switches and straps are provided for terminating the receive ports of the TBOS serial interrogator inputs and setting the electrical interface of the responder ports. These are located on a removeable Configuration Module.

If necessary, refer to Fig. 1 for a functional schematic showing the switches and straps.

WARNING:

Any time the main board is removed, take care when re-installing it to avoid pinching the power wires in the rear connector.

To set the switches and straps:

1. Loosen the two screws on the front of the Configuration Board.
2. Pull out the printed circuit board to expose the switches and straps. Refer to Fig. 3 for the locations.

CONTINUED . . .

NOTE: *To access the switch and straps on the 49013 tone subassembly, remove the 5 screws from the front panel (refer to Fig. 2) and pull the main board out to expose the modem. Reinstall main board and front panel.*

FIG. 2 - SCREWS SECURING FRONT PANEL

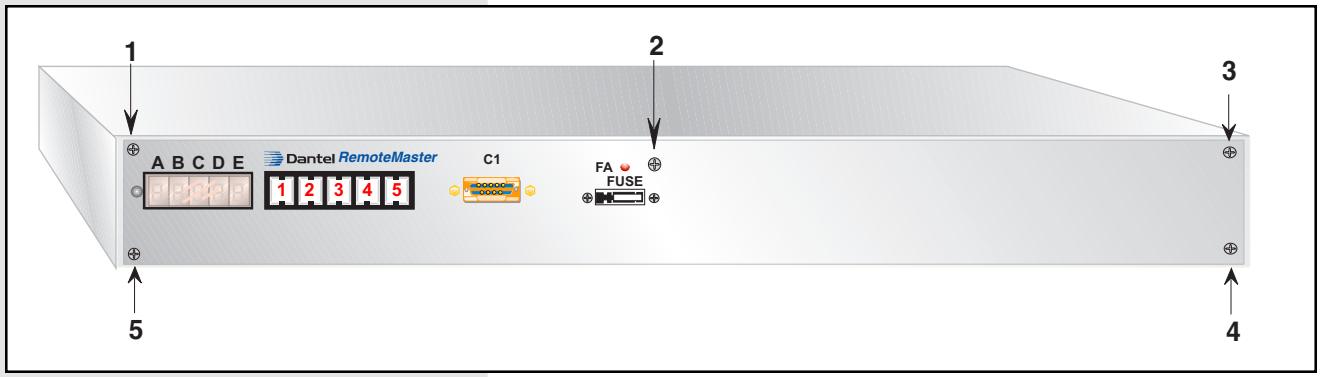
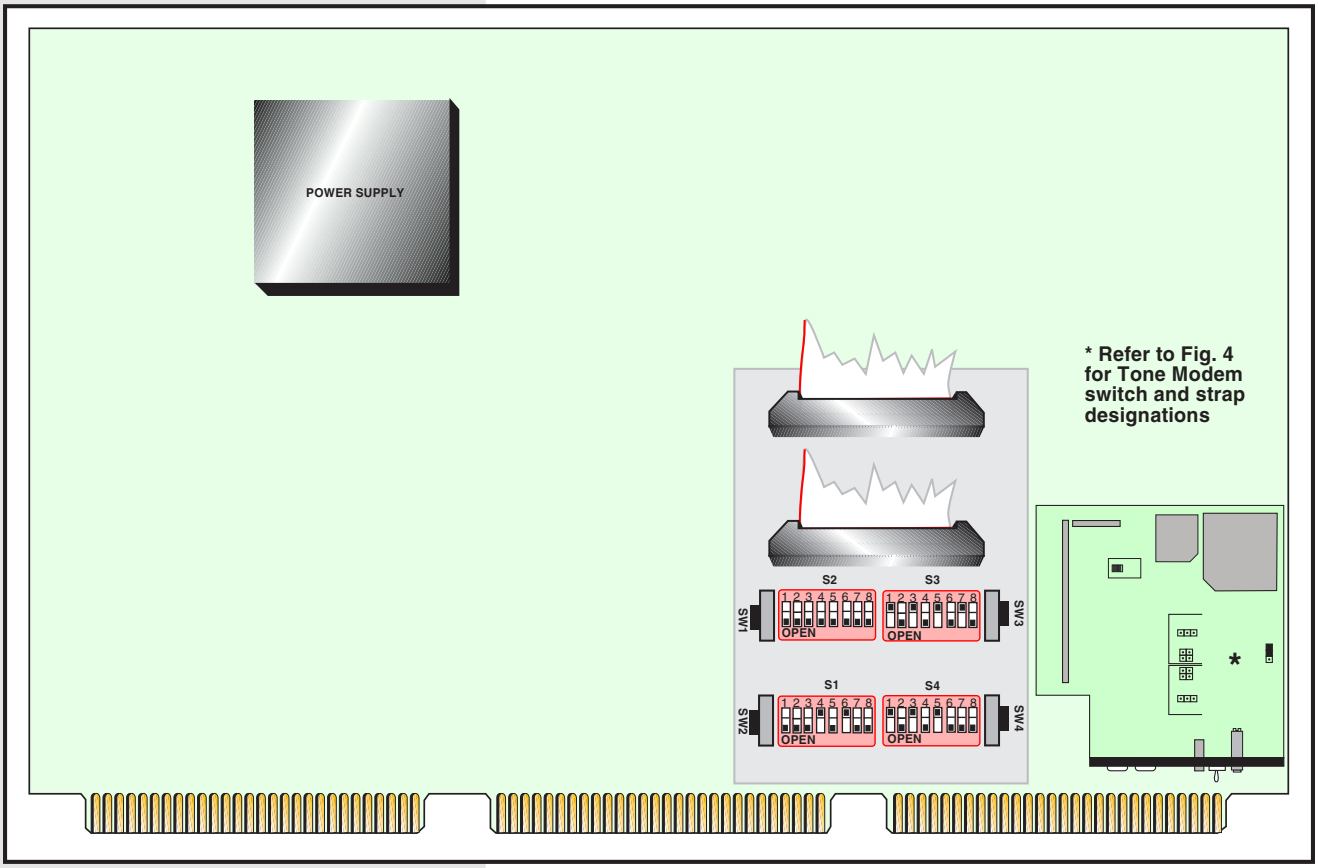


FIG. 3 - SWITCH AND STRAP LOCATIONS



3. Refer to Table A to terminate the TBOS receive ports with 182 ohms as needed. The factory settings are terminated.

CONTINUED . . .

TABLE A - SWITCH SETTINGS TO TERMINATE TBOS RECEIVE PORTS WITH 182 OHMS

DIP SWITCH	PORT NUMBER	POSITION
S1-1	Port 1 Terminated	ON *
	Port 1 Not Terminated	OFF
S1-2	Port 2 Terminated	ON *
	Port 2 Not Terminated	OFF
S1-3	Port 3 Terminated	ON *
	Port 3 Not Terminated	OFF
S1-4	Port 4 Terminated	ON *
	Port 4 Not Terminated	OFF
S1-5	Port 5 Terminated	ON *
	Port 5 Not Terminated	OFF
S1-6	Port 6 Terminated	ON *
	Port 6 Not Terminated	OFF
S1-7	Port 7 Terminated	ON *
	Port 7 Not Terminated	OFF
S1-8	Port 8 Terminated	ON *
	Port 8 Not Terminated	OFF

* Factory Settings

NOTE:

Use RS-422 for point-to-point connections and RS-485 for multi-point connections.

NEW NOTE

5. Refer to Table B to set the switches and straps for Responder Port 1. The factory setting is RS-232.

TABLE B - RESPONDER PORT 1 SWITCH AND STRAP SETTINGS

	Switch 2			Switch 3							
	S2-1	S2-3	S2-4	S3-1	S3-2	S3-3	S3-4	S3-5	S3-6	S3-7	S3-8
RS-232	OFF	OFF	ON	ON	OFF	ON	OFF	ON	OFF	ON	OFF
RS422/485											
Terminated	ON	ON	OFF	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Unterminated	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	ON	OFF	ON

ON = CLOSED
OFF = OPEN

6. Refer to Table C to set the switches and straps for Responder Port 2. The factory setting is RS-232.

TABLE C - RESPONDER PORT 2 SWITCH AND STRAP SETTINGS

	Switch 2			Switch 4							
	S2-2	S2-5	S2-6	S4-1	S4-2	S4-3	S4-4	S4-5	S4-6	S4-7	S4-8
RS-232	OFF	OFF	ON	ON	OFF	ON	OFF	ON	OFF	ON	OFF
RS422/485											
Terminated	ON	ON	OFF	OFF	ON	OFF	ON	OFF	ON	OFF	ON
Unterminated	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	ON	OFF	ON

ON = CLOSED
OFF = OPEN

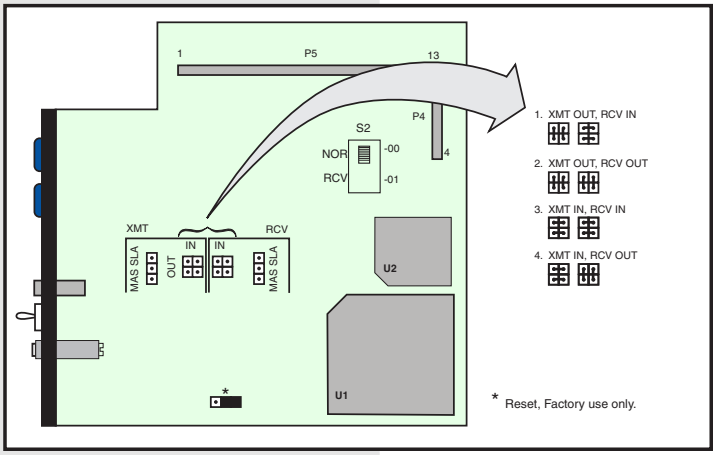
7. Refer to Table D and Fig. 4 to set the switches for Responder Port 4, the 202 modem port.

CONTINUED . . .

TABLE D - RESPONDER PORT 4 (MODEM) SWITCH SETTINGS

OPTION	INSTALL STRAP
MODE	
Master Modem in Master/Slave system	XMT MAS and RCV MAS
Slave Modem in Master/Slave system	XMT SLA and RCV SLA
Single Modem (no Master/Slave) Store straps in non-operative position or remove.	XMT and RCV open (no straps)
RCV PAD	
RCV Pad IN (input level between 0 and -20 dBm) RCV Pad OUT (input level between -20 and -40 dBm)	Jumpers parallel to P5 Jumpers perpendicular to P5
XMT PAD	
XMT Pad IN (output adjustable from -20 to -40 dBm) XMT Pad OUT (output adjustable from -1 to -20 dBm)	Jumpers parallel to P5 Jumpers perpendicular to P5

FIG. 4 - 49013 SWITCH AND STRAP LOCATIONS



8. Refer to Table E to set the switches for control outputs

TABLE E - CONTROL OUTPUT SWITCH SETTINGS (POINTS 9-16)

CONTROL POINT	NORMALLY OPEN	NORMALLY CLOSED
9, 10	SW1 NO	SW1 NC
11, 12	SW2 NO	SW2 NC
13, 14	SW3 NO	SW3 NC
15, 16	SW4 NO	SW4 NC

9. Refer to Table F to set the on-board battery switches.

TABLE F - BATTERY SWITCHES

BATTERY BACKUP	SWITCH
Enabled	S2-7 OFF (OPEN); S2-8 ON (CLOSED)
Disabled	S2-7 ON (CLOSED); S2-8 OFF (OPEN)

10. End of Switch and Strap Settings.

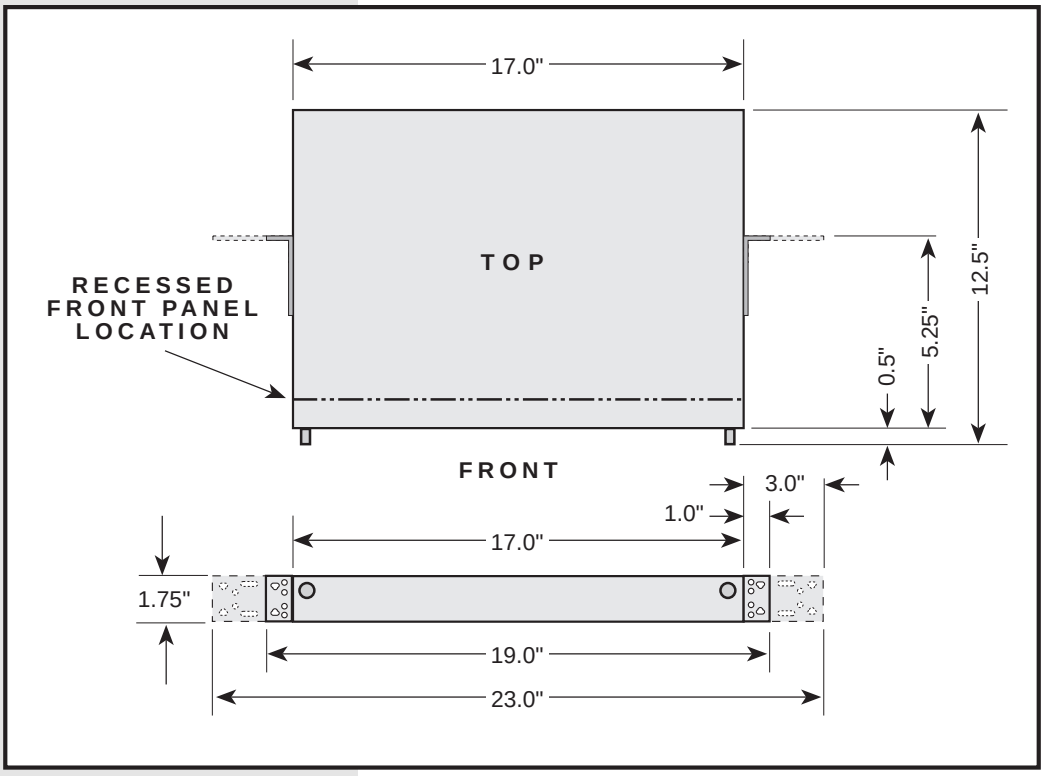
EQUIPMENT MOUNTING

Brackets on the side of the shelf are installed for mounting the ***TL1 RemoteMaster*** in a 19-inch equipment rack. Refer to Fig. 5 for overall dimensions of the ***TL1 RemoteMaster***.

- For mounting in a 23-inch equipment rack, remove the brackets and reinstall them with the long sides extending out from the shelf.
- For wall mounting, replace the brackets with special wall mount brackets furnished as loose parts. The long side of each bracket mounts to the ***TL1 RemoteMaster***.

NOTE: *The special brackets are supplied only when specifically ordered. Refer to the* ***Ordering Information*** *section.*

FIG. 5 - DIMENSIONS



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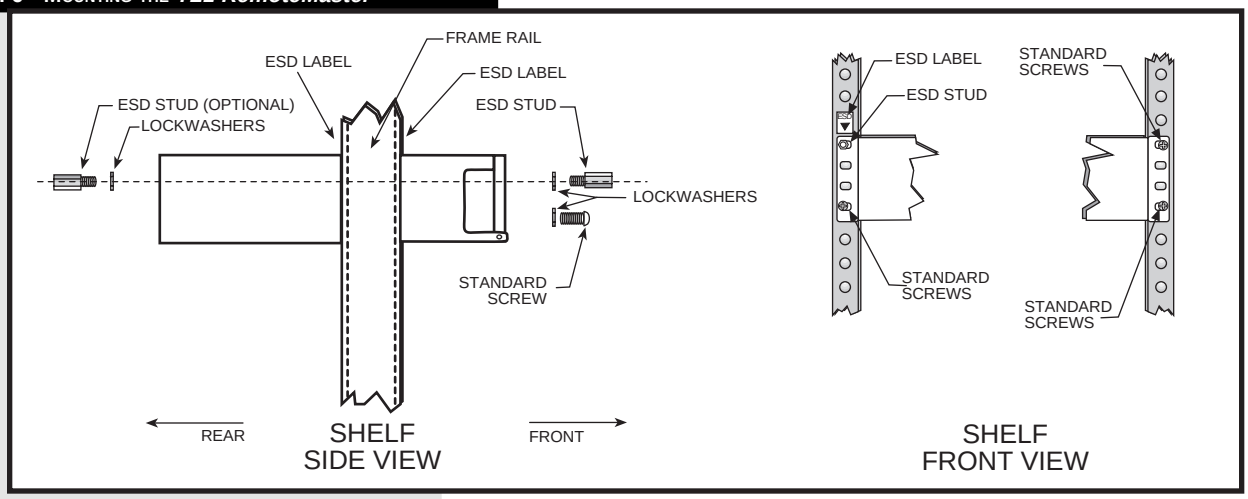
For wall mounting, attach the ***TL1 RemoteMaster*** where desired. Hardware is not supplied.

Refer to Fig. 6 for mounting the ***TL1 RemoteMaster*** in an equipment rack and follow the instructions below. Mounting hardware is supplied in a bag attached to the side of the shelf.

1. Facing the frame rail, place the ***TL1 RemoteMaster*** in the rack in the desired location. Fasten with three Phillips screws and lockwashers - two on the right side and one on the lower left side.
2. Install one ESD stud, with lockwasher, in the upper left corner.
3. Tighten the screws and ESD stud snugly. Make sure the stud is properly grounded to the frame rail.
4. Place an ESD label next to the ESD stud.
5. From the rear of the ***TL1 RemoteMaster***, install the other ESD stud and lockwasher into the frame next to the ***TL1 RemoteMaster***. Secure tightly, ensuring proper grounding of the ESD stud.
6. Place an ESD label next to the ESD stud.
7. End of equipment mounting.

FIG. 6 - MOUNTING THE *TL1 RemoteMaster*



WIRING

CAUTION: *To avoid possible damage to the unit, do not make any connections to the **TL1 RemoteMaster** if the power is connected and turned on.*

*When cabling to the **TL1 RemoteMaster**, leave sufficient slack in the cabling to permit the internal printed circuit board to slide out from the edge connector side (refer to Fig. 7). This allows replacement of the circuit board without having to rewire the connectors.*

If the wire bundle extending out one side of the unit is too thick to permit closing the plastic cover, divide the wiring so some of it comes out the right side of the unit and some of it extends out the left side of the unit.

BONDING AND GROUNDING CONDUCTOR AND CONNECTION REQUIREMENTS

To ensure positive connections, the following guidelines **shall be** adhered to:

1. All bonding and grounding conductors (wire, bus bars, or braided straps for example) **shall be** made of copper and of sufficiently low impedance to safely conduct any fault current.

   Aluminum **shall not** be used.

2. Conductors of dissimilar metals **shall not** be used in terminals or splicing connectors. Any flux, inhibitors, or compounds (where used) **shall be** suitable and **shall not** adversally affect the conductor, the installation, or the equipment.

3. All unplated connectors, braided straps, and bus bars **shall be** brought to a bright finish and coated with an antioxidant before crimp connections are made.

   Tinned, solder-plated, or silver-plated and other plated connection surfaces do not have to prepared this way, but they **shall be** clean and free of contaminants. Raceway fittings **shall be** tightened to provide a low-impedance path.

4. Multiple connectors **shall not** be secured by the same bolt assembly.

5. Any unplated connection surfaces used (if any) that are part of a grounding or bonding path **shall be** brought to a bright finish and coated with an antioxidant before being electrically connected.

6. All grounding and bonding conductors **shall be** connected by exothermic welding or compression type fittings to the greatest extent possible.

   Connector devices depending solely on solder **shall not** be used.

CONTINUED . . .

7. The following connector types **shall not** be used to terminate grounding or bonding connections:

   - ♦ Soldering lugs
   - ♦ Screwless (push-in)
   - ♦ Friction-fitWire connectors P1, P2, and P3:

Refer to the Functional Schematic, Fig. 1, if necessary.

1. Wire connector P1 (refer to Fig. 8) according to Table G and Fig. 9. Wire P1 to discrete alarm inputs 1-64. Wire the inputs to equipment that puts out a ground signal when there is an alarm. P2 is available for ground reference.

FIG. 8 - CONNECTOR LOCATIONS FOR WIRING

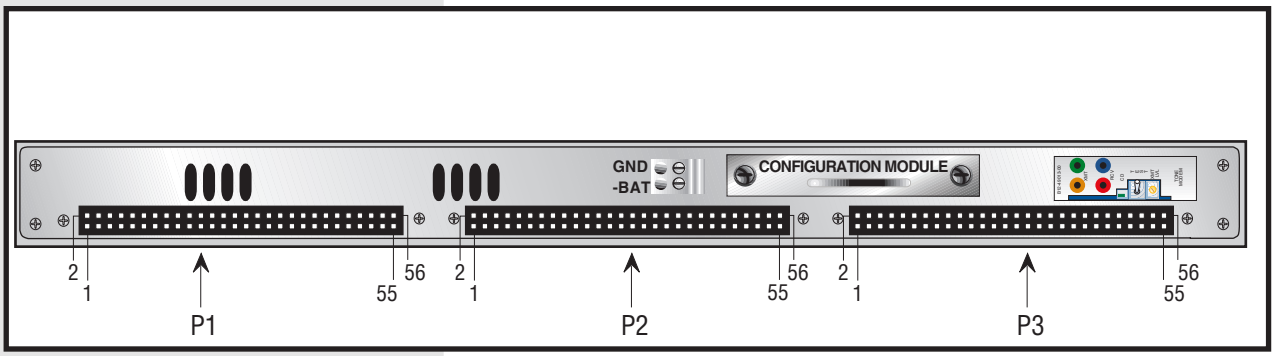
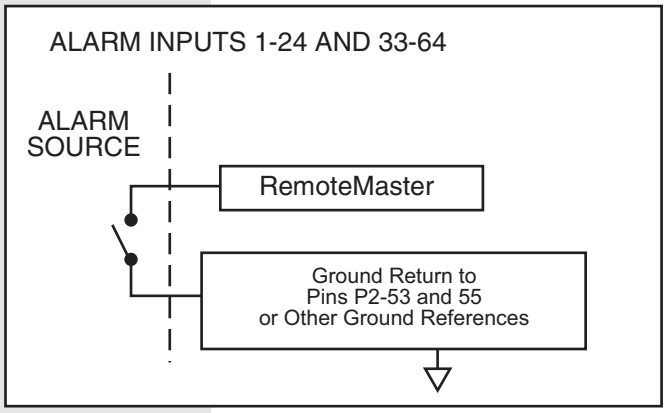


TABLE G - PIN ASSIGNMENTS FOR CONNECTOR P1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	Discrete Input 33	29	Discrete Input 47
2	Discrete Input 1	30	Discrete Input 15
3	Discrete Input 34	31	Discrete Input 48
4	Discrete Input 2	32	Discrete Input 16
5	Discrete Input 35	33	Discrete Input 49
6	Discrete Input 3	34	Discrete Input 17
7	Discrete Input 36	35	Discrete Input 50
8	Discrete Input 4	36	Discrete Input 18
9	Discrete Input 37	37	Discrete Input 51
10	Discrete Input 5	38	Discrete Input 19
11	Discrete Input 38	39	Discrete Input 52
12	Discrete Input 6	40	Discrete Input 20
13	Discrete Input 39	41	Discrete Input 53
14	Discrete Input 7	42	Discrete Input 21
15	Discrete Input 40	43	Discrete Input 54
16	Discrete Input 8	44	Discrete Input 22
17	Discrete Input 41	45	Discrete Input 55
18	Discrete Input 9	46	Discrete Input 23
19	Discrete Input 42	47	Discrete Input 56
20	Discrete Input 10	48	Discrete Input 24
21	Discrete Input 43	49	Discrete Input 57
22	Discrete Input 11	50	Discrete Input 58
23	Discrete Input 44	51	Discrete Input 59
24	Discrete Input 12	52	Discrete Input 60
25	Discrete Input 45	53	Discrete Input 61
26	Discrete Input 13	54	Discrete Input 62
27	Discrete Input 46	55	Discrete Input 63
28	Discrete Input 14	56	Discrete Input 64

FIG. 9 - ALARM INPUTS



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2. Wire connector P2 (refer to Fig. 8) according to Table H.
   - ♦ Wire discrete alarm inputs 25-32. There are two wires for each input (+ and -). Refer to Fig. 10 for typical wiring circuits.
   - ♦ Wire the control relay outputs 1-16.
   - ♦ Wire the change-of-status (COS) relay, COS acknowledge, and fuse alarm (all options).

WARNING: *When power is applied to the **TL1 RemoteMaster**, negative battery voltage is present at pins **54** and **56** of connector **P2** and at any alarm inputs wired to negative battery. For safety, cover these pins with protective insulation.*

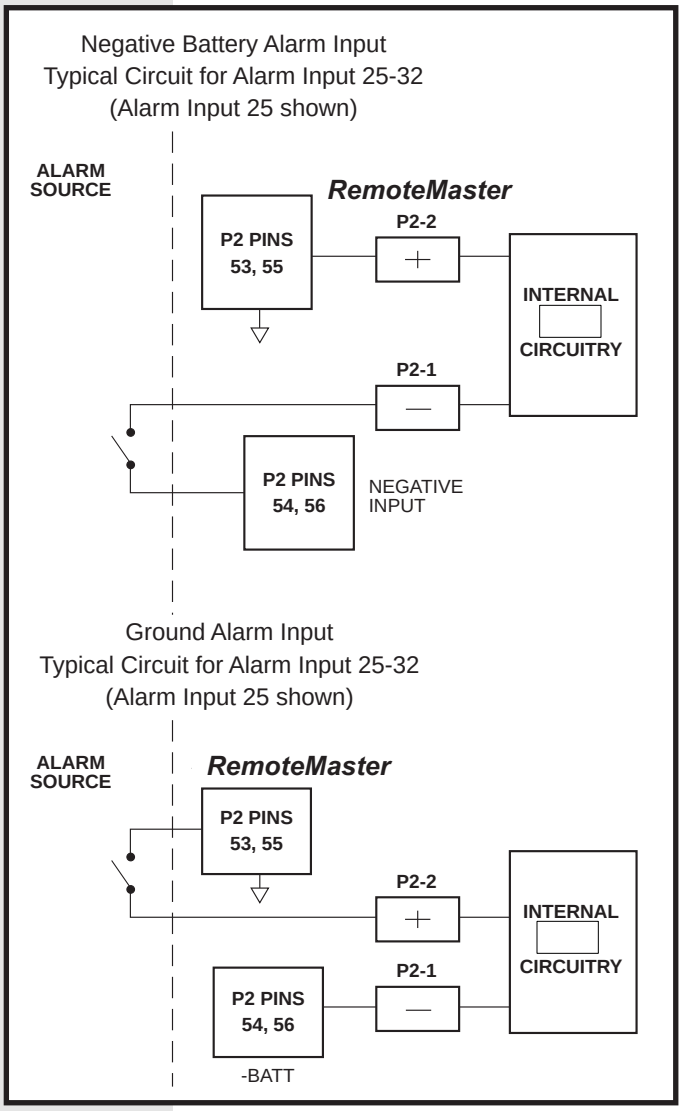
TABLE H - PIN ASSIGNMENTS FOR CONNECTOR P2

PIN	ASSIGNMENT
1	Discrete Input 25 (-)
2	Discrete Input 25 (+)
3	Discrete Input 26 (-)
4	Discrete Input 26 (+)
5	Discrete Input 27 (-)
6	Discrete Input 27 (+)
7	Discrete Input 28 (-)
8	Discrete Input 28 (+)
9	Discrete Input 29 (-)
10	Discrete Input 29 (+)
11	Discrete Input 30 (-)
12	Discrete Input 30 (+)
13	Discrete Input 31 (-)
14	Discrete Input 31 (+)
15	Discrete Input 32 (-)
16	Discrete Input 32 (+)
17	Control Relay Output 1
18	Control Relay Output 1
19	Control Relay Output 2
20	Control Relay Output 2
21	Control Relay Output 3
22	Control Relay Output 3
23	Control Relay Output 4
24	Control Relay Output 4
25	Control Relay Output 5
26	Control Relay Output 5
27	Control Relay Output 6
28	Control Relay Output 6
29	Control Relay Output 7
30	Control Relay Output 7

PIN	ASSIGNMENT
31	Control Relay Output 8
32	Control Relay Output 8
33	Control Relay Output 9
34	Control Relay Output 9
35	Control Relay Output 10
36	Control Relay Output 10
37	Control Relay Output 11
38	Control Relay Output 11
39	Control Relay Output 12
40	Control Relay Output 12
41	Control Relay Output 13
42	Control Relay Output 13
43	Control Relay Output 14
44	Control Relay Output 14
45	Control Relay Output 15
46	Control Relay Output 15
47	Control Relay Output 16
48	Control Relay Output 16
49	Acknowledge COS
50	Fuse Alarm (Gnd for alarm)
51	COS Relay
52	COS Relay
53	Ground Out (use for alarm point ground reference)
54	Negative Battery Out (for alarm points 25-32 if battery reference is needed.)
55	Ground Out (use for alarm point ground reference)
56	Negative Battery Out (for alarm points 25-32 if battery reference is needed.)

CONTINUED . . .

FIG. 10 - TYPICAL CIRCUIT FOR ALARM INPUT



3. Wire connector P3 (refer to Fig. 8) according to Table I. Wire P3 to the eight TBOS serial interrogator ports, the three responder ports, and the configuration port.

CONTINUED . . .

TABLE I - PIN ASSIGNMENTS FOR CONNECTOR P3

PIN	ASSIGNMENT
1	TBOS Serial Port 1 RX-
2	TBOS Serial Port 1 RX+
3	TBOS Serial Port 1 TX-
4	TBOS Serial Port 1 TX+
5	TBOS Serial Port 2 RX-
6	TBOS Serial Port 2 RX+
7	TBOS Serial Port 2 TX-
8	TBOS Serial Port 2 TX+
9	TBOS Serial Port 3 RX-
10	TBOS Serial Port 3 RX+
11	TBOS Serial Port 3 TX-
12	TBOS Serial Port 3 TX+
13	TBOS Serial Port 4 RX-
14	TBOS Serial Port 4 RX+
15	TBOS Serial Port 4 TX-
16	TBOS Serial Port 4 TX+
17	TBOS Serial Port 5 RX-
18	TBOS Serial Port 5 RX+
19	TBOS Serial Port 5 TX-
20	TBOS Serial Port 5 TX+
21	TBOS Serial Port 6 RX-
22	TBOS Serial Port 6 RX+
23	TBOS Serial Port 6 TX-
24	TBOS Serial Port 6 TX+
25	TBOS Serial Port 7 RX-
26	TBOS Serial Port 7 RX+
27	TBOS Serial Port 7 TX-
28	TBOS Serial Port 7 TX+
29	TBOS Serial Port 8 RX-
30	TBOS Serial Port 8 RX+
31	TBOS Serial Port 8 TX-
32	TBOS Serial Port 8 TX+

PIN	ASSIGNMENT
33	Responder Port 1 RS-422/485 RX- or RS-232 RTS
34	Responder Port 1 RS-422/485 RX+ or RS-232 CTS
35	Responder Port 1 RS-422 TX- or RS-232 TD
36	Responder Port 1 RS-422 TX+ or RS-232 RD
37	Responder Port 1 RS-232 GND
38	Responder Port 2 RS-232 CTS
39	Responder Port 2 RS-422/485 RX- or RS-232 RTS
40	Responder Port 2 RS-422/485 RX+ or RS-232 GND
41	Responder Port 2 RS-422 TX- or RS-232 TD
42	Responder Port 2 RS-422 TX+ or RS-232 RD
43	Responder Port 4 202 Modem RCV+
44	Responder Port 4 202 Modem RCV-
45	Responder Port 4 202 Modem XMT+
46	Responder Port 4 202 Modem XMT-
47	Not Used
48	Not Used
49	Not Used
50	Not Used
51	Not Used
52	Not Used
53	Configuration Port TXD
54	Configuration Port RXD
55	Configuration Port GND
56	Not Used

NOTE:

Connect chassis ground to the ground lug located on the side of the ***RemoteMaster***. Do not connect chassis ground to the power connector.

Chassis and signal grounds are isolated from each other.

Wire power

Wire power to the connector between P2 and P3 on the back panel of the ***TL1 RemoteMaster*** (refer to Fig. 8).

1. Insert the negative battery lead in the lower opening on the left side of the connector. Tighten the connection with the screw on the front of the connector.
2. Insert the ground lead in the upper opening on the left side of the connector. Tighten the connection with the screw on the front of the connector.
3. End of power wiring section.

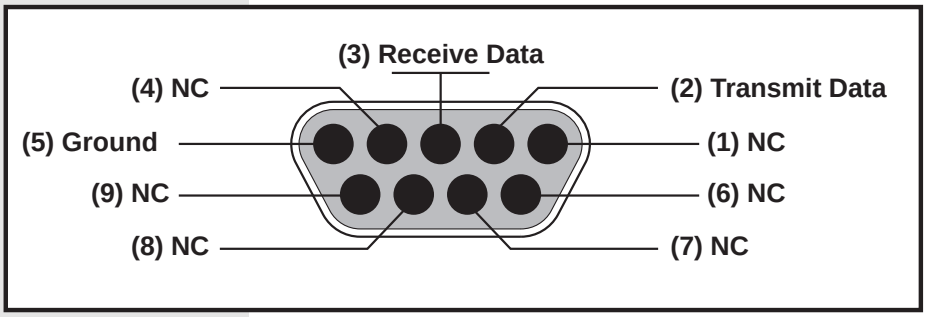
CONFIGURATION

The ***TL1 RemoteMaster*** must be configured with a computer running the TL1 Editor program before it will operate properly. The configuration is battery backed-up.

To connect a computer:

Connect a computer to wire-wrap pins 53, 54 and 55 of connector P3 on the back panel (refer back to Table I) or connect it to C1 on the front panel. Refer to Fig. 11 for a drawing showing how connector C1 is wired.

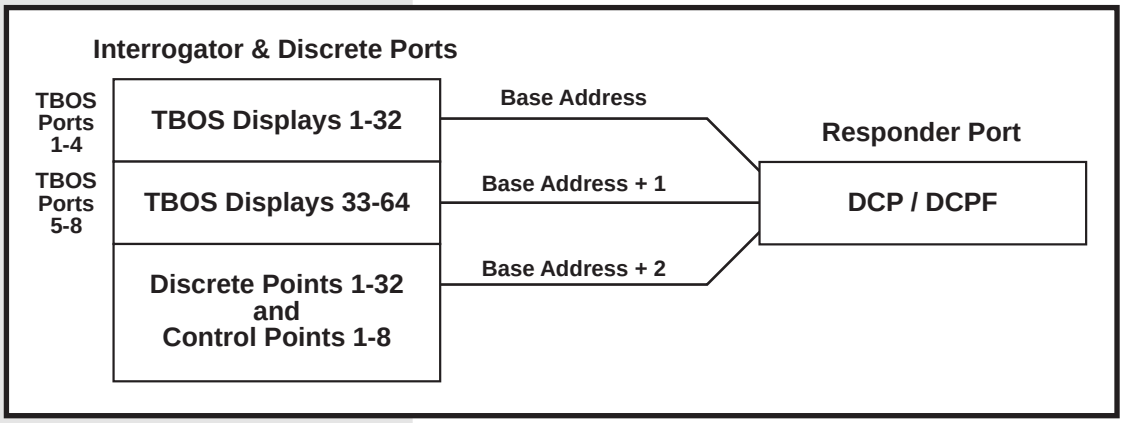
FIG. 11 - DB9 CONNECTOR WIRING



To configure the *TL1 RemoteMaster* remotely:

Connect C1, or wire-wrap pins 53, 54, and 55 of P3 to your network. Before going to the remote site to configure the ***TL1 RemoteMaster***, apply power to the ***TL1 RemoteMaster***. Connect the computer at the remote site.

FIG. 12 - DCP AND DCPF ALARM REPORTING



INSTALLING THE REMOTEMASTER EDITOR SOFTWARE

Windows 3.1

This software is not compatible with the Windows 3.1 operating system.

Windows 95/NT Installation

NOTE: *Windows 95 or NT must be installed on your computer. This manual assumes that you are familiar with how to use Windows.*

1. Open Windows 95.
2. Click the *Start* button.

NOTE: *Make sure all other Windows programs are closed. The installation program may require system resources used by other programs and may upgrade some files. Any upgrades should not affect the operation of any of your Windows programs.*

3. The RemoteMaster software is on one disk. Insert that disk into one of the diskette drives of your computer.
4. Click the *Run* command.
5. In the Command Line type the letter of the drive where you installed the disk (either drive A or B). Then type a colon, a backslash (\) and *setup.exe*. For example, type **B:\setup.exe**
6. Click OK.

7. Follow the instructions on the screen for installing the software. The software will be installed in the default directory of C:\Program Files\Dantel\TL1 RemoteMaster Editor, unless you specify a different directory.

8. When the installation is complete, store the disk in a safe place.

CONFIGURATION

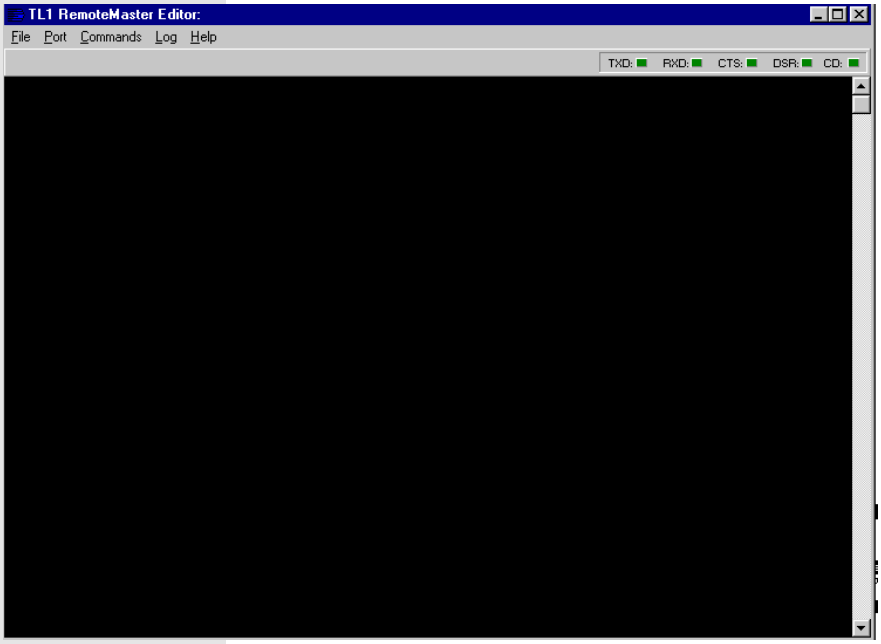
1. Apply power to the ***TL1 RemoteMaster*** and the computer.

TERMINAL MODE

The RemoteMaster Terminal allows you to establish a terminal session with the RemoteMaster device. This session is used to access the configuration menu. To enter the terminal mode, select File | Terminal from the main menu, or click the Terminal button on the application toolbar.

Features of the Terminal include:

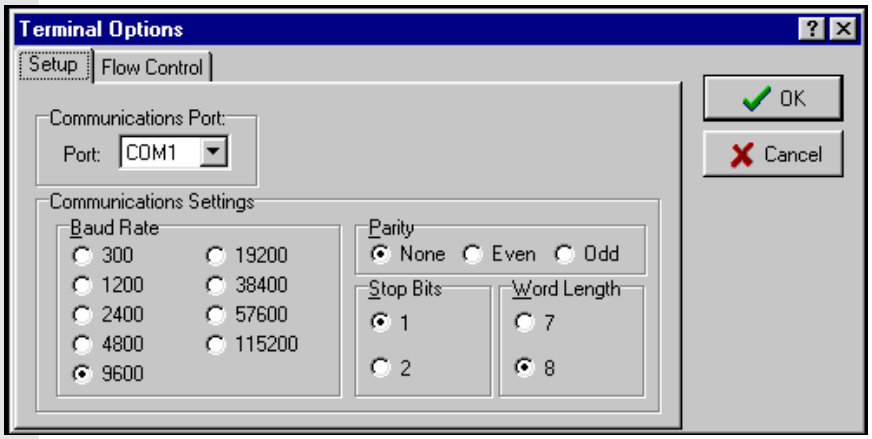
- TL1 Command Editor;
- Support for Capture Files;
- Hardware and Software flow control support.
- Default settings



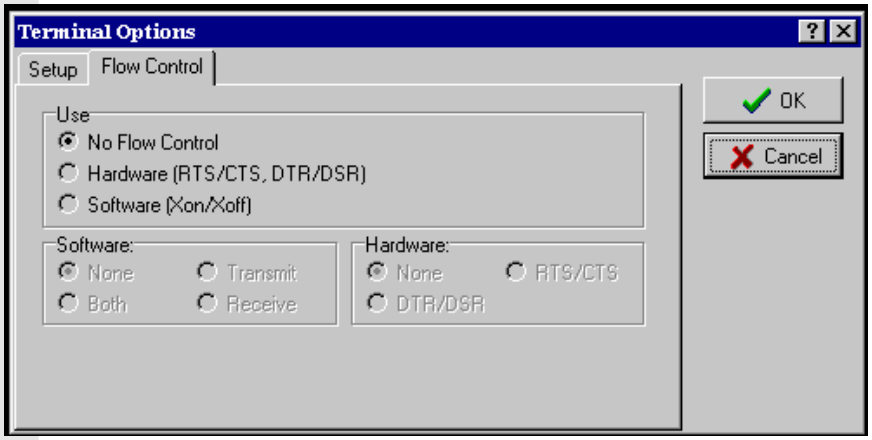
CONTINUED . . .

Communications Setup

The Communication Setup dialog allows you to configure the port for operation in terminal mode. The following screen shows the Setup window and its default settings. To successfully communicate with the RemoteMaster, the baud rate, parity, stop bits, and word length must remain 9600, none, 1, and 8.



The following shows the Flow Control window:



2. Click OK, select Port | Connect and push button 5 on the front of the ***RemoteMaster.***

   The ***TL1 RemoteMaster***'s configuration appears on the terminal screen. The screen displays the current configurations of the eight interrogator (TBOS) and three responder ports, and the status of the expansion board.

3. Configure the interrogator ports, responder ports, COS relay, and COS timer as described below.

CONFIGURING THE INTERROGATOR PORTS

1. Type 1 at the configuration screen to display the interrogator (TBOS) port prompts.
2. SELECT PORT NUMBER - Type the port number to be configured. Valid entries are 1-8.

   For the following selections, type S or press ENTER to skip to the next selection, type F to save changes and exit the port configuration, or type Q to quit the port configuration without saving any changes.
3. SELECT BAUD RATE - Enter the desired baud rate. Valid entries are 1 = 300, 2 = 600, 3 = 1200, 4 = 2400, 5 = 4800, 6 = 9600.
4. SELECT PARITY - Set for odd. Type 2 if the parity is not set for odd.
5. SELECT STOP BITS - Set for 1. Type 1 if the stop bits are not set for 1.

NOTE:
Use RS-422 for point-to-point connections and RS-485 for multi-point connections.

6. SELECT MODE - Enter the desired interface. Type 1 for RS-422. Type 2 for RS-485.
7. SELECT DISPLAY ON/OFF INFO FOR DISPLAY # - Type 1 to disable the specified display; type 2 to enable the specified display. At display 8, changing the value, typing S or F, or pressing ENTER saves any changes and brings up the configuration screen.

NEW NOTE

NOTE: *If TBOS protocol is used on any of the responder ports, enter the displays in the Interrogator Ports chart of the Configuration Worksheet (Table I) at the end of this chapter. This will help configure the responder ports.*

8. End of procedure.

CONFIGURING THE RESPONDER PORTS

The ***TL1 RemoteMaster*** has three independently configurable responder ports: ports 1, 2 and 4 (ports 1 and 2 are RS-232/422/485, port 3 is not used, and port 4 is the 202 modem port).

Configure each responder port for DCP, DCPF, TBOS, TL1, or TABS protocol. The configuration steps for each protocol are listed separately below.

NOTE:

The default parameters for each available responder port protocol are as follows:

DCP & DCPF
Parity = None; 1 stop bit;
Baudrate = 9600

TBOS & TABS
Parity = Odd; 1 stop bit;
Baudrate =2400

TL1
Parity = None; 1 stop bit;
Baudrate =9600

Configuring a responder port for TL1 protocol

1. Type 2 at the configuration screen to display the responder port prompts.
2. SELECT PORT NUMBER - Type the port number to be configured. Valid entries are 1, 2, or 4.

   For the following selections, type S or press ENTER to skip to the next selection, type F to save changes and exit the port configuration, or type Q to quit the port configuration without saving any changes.
3. SELECT PROTOCOL - Set for TL1. Type 5 if the protocol is not set for TL1.
4. SELECT BAUD RATE - Enter the desired baud rate. Valid entries are 1 = 300, 2 = 600, 3 = 1200, 4 = 2400, 5 = 4800, 6 = 9600. For port 4, the 202 modem port, the baud must be 1200.
5. SELECT PARITY - Set for none. Type 1 if the parity is not set for none.
6. SELECT STOP BITS - Set for 1. Type 1 if the number of stop bits is not set for 1.
7. SELECT RTS/CTS HANDSHAKE - Default is 1 (OFF). Typing 2 enables RTS/CTS handshaking. Changing the value, typing S or F, or pressing ENTER saves any changes and brings up the configuration screen. End of procedure.

Configuring a responder port for DCPF protocol

1. Type 2 at the configuration screen to display the responder port prompts.
2. SELECT PORT NUMBER - Type the port number to be configured. Valid entries are 1, 2, or 4.

   For the following selections, type S or press ENTER to skip to the next selection, type F to save changes and exit the port configuration, or type Q to quit the port configuration without saving any changes.
3. SELECT PROTOCOL - Set for DCPF. Type 1 if the protocol is not set for DCPF.
4. SELECT BASE ADDRESS - Enter the base (first) address to which the port will respond. Valid entries are 1-253. Refer to Fig. 9. If a new address is entered, press the ENTER key.
5. SELECT BAUD RATE - Enter the desired baud rate. Valid entries are 1 = 300, 2 = 600, 3 = 1200, 4 = 2400, 5 = 4800, 6 = 9600. For port 4, the 202 modem port, the baud must be 1200.
6. SELECT PARITY - Set for none. Type 1 if the parity is not set for none.
7. SELECT STOP BITS - Set for 1. Type 1 if the number of stop bits is not set for 1.
8. SELECT RTS/CTS HANDSHAKE - Default is 1 (OFF). Typing 2 enables RTS/CTS handshaking. Changing the value, typing S or F, or pressing ENTER saves any changes and brings up the configuration screen. End of procedure.

Configuring a responder port for DCP protocol:

1. Type 2 at the configuration screen to display the responder port prompts.
2. SELECT PORT NUMBER - Type the port number to be configured. Valid entries are 1, 2, or 4.

   For the following selections, type S or press ENTER to skip to the next selection, type F to save changes and exit the port configuration, or type Q to quit the port configuration without saving any changes.
3. SELECT PROTOCOL - Set for DCP. Type 2 if the protocol is not set for DCP.

4. SELECT BASE ADDRESS - Enter the base (first) address to which the port will respond. Valid entries are 1-253. Refer to Fig. 9. If a new address is entered, press the ENTER key.
5. SELECT BAUD RATE - Enter the desired baud rate. Valid entries are 1 = 300, 2 = 600, 3 = 1200, 4 = 2400, 5 = 4800, 6 = 9600. For port 4, the 202 modem port, the baud must be 1200.
6. SELECT PARITY - Set for none. Type 1 if the parity is not set for none.
7. SELECT STOP BITS - Set for 1. Type 1 if the number of stop bits is not set for 1.
8. SELECT RTS/CTS HANDSHAKE - Default is 1 (OFF). Typing 2 enables RTS/CTS handshaking. Changing the value, typing S or F, or pressing ENTER saves any changes and brings up the configuration screen. End of procedure.

NOTE: *With DCP protocol, certain address combinations result in reporting failures. The problem, a loss of synchronization in the addressing sequence, is inherent in DCP.*

Dantel recommends DCPF protocol because it maintains synchronization.

NOTE:

The default parameters for each available responder port protocol are as follows:

DCP & DCPF
Parity = None; 1 stop bit

TBOS & TABS
Parity = Odd; 1 stop bit

Configuring a responder port for TBOS protocol:

1. Type 2 from the configuration screen to display the responder port prompts.
2. SELECT PORT NUMBER - Type the port number to be configured. Valid entries are 1, 2, or 4.

   For the following selections, type S or press ENTER to skip to the next selection, type F to save changes and exit the port configuration, or type Q to quit the port configuration without saving any changes.
3. SELECT PROTOCOL - Set for TBOS. Type 3 if the protocol is not set for TBOS.
4. SELECT BAUD RATE - Enter the desired baud rate. Valid entries are 1 = 300, 2 = 600, 3 = 1200, 4 = 2400, 5 = 4800, 6 = 9600.
5. SELECT PARITY - Set for odd. Type 2 if the parity is not set for odd.
6. SELECT STOP BITS - Set for 1. Type 1 if the stop bits are not set for 1.
7. SELECT DISPLAY MAPPING INFORMATION FOR TBOS DISPLAY # - Enter the type of alarm information the display will contain. Valid entries are 0 = Off, 1 - 64 = TBOS Displays, D = Discretes.

CONTINUED . . .

NOTE: *Refer to the Configuration Worksheet (Table I) at the end of this chapter to help configure the port.*

Make an entry for each of the eight displays on the TBOS responder port. If a new value is entered, press the ENTER key.

8. SELECT RTS/CTS HANDSHAKE - Default is 1 (OFF). Typing 2 enables RTS/CTS handshaking.

   Changing the value, typing S or F, or pressing ENTER saves any changes and brings up the configuration screen.

Configuring a responder port for TABS protocol:

1. Type 2 from the configuration screen to display the responder port prompts.
2. SELECT PORT NUMBER - Type the port number to be configured. Valid entries are 1, 2, or 4.

   For the following selections, type S or press ENTER to skip to the next selection, type F to save changes and exit the port configuration, or type Q to quit the port configuration without saving any changes.
3. SELECT PROTOCOL - Set for TABS. Type 4 if the protocol is not set for TABS.
4. SELECT ADDRESS - Enter the address. Valid entries are 0 - 31. If a new address is entered, press the ENTER key.
5. SELECT BAUD RATE - Enter the desired baud rate. Valid entries are 1 = 300, 2 = 600, 3 = 1200, 4 = 2400, 5 = 4800, 6 = 9600.
6. SELECT PARITY - Set for odd. Type 2 if the parity is not set for odd.
7. SELECT STOP BITS - Set for 1. Type 1 if the stop bits are not set for 1.
8. SELECT RTS/CTS HANDSHAKE - Default is 1 (OFF). Typing 2 enables RTS/CTS handshaking. Changing the value, typing S or F, or pressing ENTER saves any changes and brings up the configuration screen.
9. End of procedure.

NOTE:

The default parameters for each available responder port protocol are as follows:

DCP & DCPF
Parity = None; 1 stop bit

TBOS & TABS
Parity = Odd; 1 stop bit

CONFIGURING THE COS RELAY

Type 3 at the configuration screen to toggle the status of the COS (change of status) relay between LIVE and COS.

In the LIVE mode, the relay (pins P2-51 and P2-52) will close at the first alarm. If additional alarms occur, the relay will pulse once whenever there is a new alarm. The relay will open either when all the alarms clear or when the alarms are acknowledged. Acknowledge alarms either by applying a ground at the ACK COS input or by pressing button 4 on the front panel of the ***TL1 RemoteMaster***.

In the COS mode, the relay will close at the first alarm. If additional alarms occur, the relay will pulse once whenever there is a new alarm. The relay will open either when the COS timer expires in 15 minutes (if the COS timer is configured ON) or when the alarms are acknowledged. Acknowledge alarms either by applying a ground at the ACK COS input or by pressing button 4 on the front panel of the ***TL1 RemoteMaster***.

CONFIGURING THE COS TIMER

Type 4 at the configuration screen to toggle the status of the COS timer between ON and OFF. When the timer is ON, the COS relay will open after 15 minutes. The COS timer is available only when the relay is in the COS mode.

REMOTEMASTER TL1 EDITOR

The RemoteMaster TL1 Editor is used to create and modify TL1 configuration databases for Dantel's RemoteMaster.

Some features of the Editor module include:

- Editing of SIDs
- Full editing of alarm and control point definitions
- Direct download and upload of RemoteMaster TL1 configuration databases using DCPF protocol
- Graphical display of SID and alarm and control definitions
- Built-in terminal with capture file support
- Hard disk storage of RemoteMaster TL1 database configurations
- Easy TL1 configuration database creation
- Easy editing of alarm and control point definitions

USING REMOTEMASTER EDITOR

The main user interface can operate in one of two modes:

- Editor Mode
- Terminal Mode.

By default, neither mode is active when the application is started.

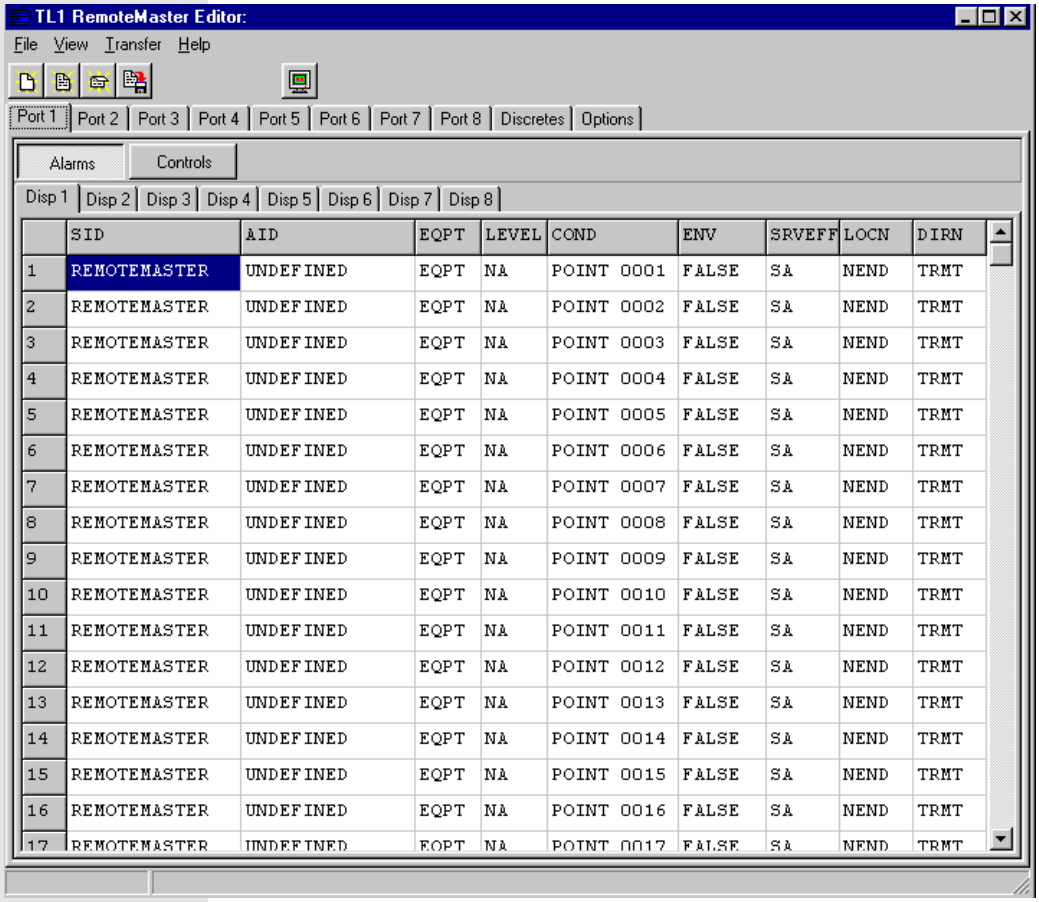
To enter the Editor Mode, you must create a new database or open an existing database.

To Create a New Database

Note:

The RemoteMaster TL1 Editor program includes an online help menu. For help on any aspect of the Editor program, select Help from the Main Menu.

You can create a new database file by selecting File | New Database from the main menu, or clicking the New Database button on the application toolbar. A default database will be generated which consists of the Master SID, and alarm definitions for 4160 alarm points (4096 serial alarm points and 64 discretes) and 4112 control points (4096 serial control points and 16 discretes). The editor will then display the main Editor interface.



	SID	AID	EQPT	LEVEL	COND	ENV	SRVEFF	LOCN	DIRN
1	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0001	FALSE	SA	NEND	TRMT
2	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0002	FALSE	SA	NEND	TRMT
3	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0003	FALSE	SA	NEND	TRMT
4	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0004	FALSE	SA	NEND	TRMT
5	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0005	FALSE	SA	NEND	TRMT
6	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0006	FALSE	SA	NEND	TRMT
7	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0007	FALSE	SA	NEND	TRMT
8	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0008	FALSE	SA	NEND	TRMT
9	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0009	FALSE	SA	NEND	TRMT
10	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0010	FALSE	SA	NEND	TRMT
11	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0011	FALSE	SA	NEND	TRMT
12	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0012	FALSE	SA	NEND	TRMT
13	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0013	FALSE	SA	NEND	TRMT
14	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0014	FALSE	SA	NEND	TRMT
15	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0015	FALSE	SA	NEND	TRMT
16	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0016	FALSE	SA	NEND	TRMT
17	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0017	FALSE	SA	NEND	TRMT

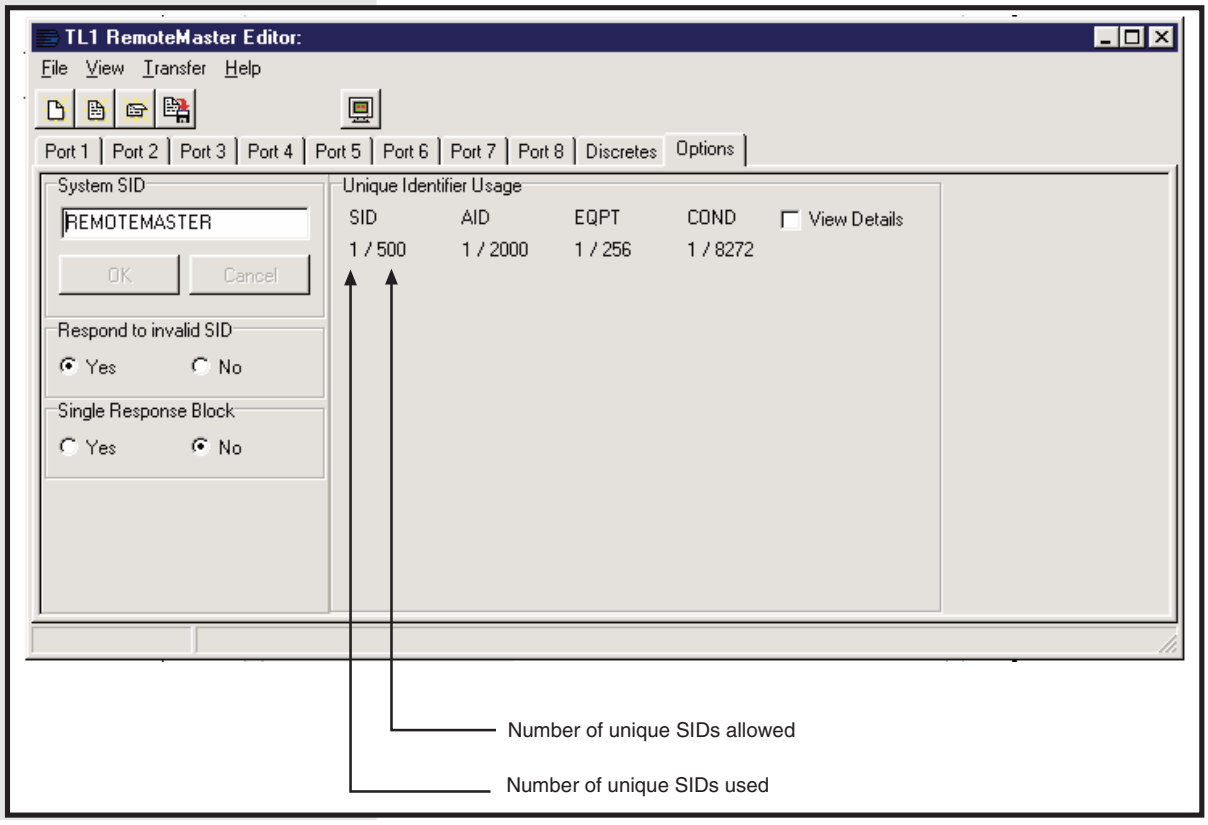
1. TOOLBAR

The toolbar provides quick access to some of the features provided in the TL1 RemoteMaster Editor. Items available from the toolbar are:

- **Create new database:** Click this button to create a new TL1 Configuration database;
- **Open Existing database**: Click this button to open an existing TL1 configuration database;
- **Close Database**: Click this button to close the current database;
- **Save Database**: Click this button to save the current database;
- **Terminal**: click the button to switch the application to terminal mode.

2. OPTIONS

The Options page is used to set options for the database configuration. Also shown is the Unique Identifier Usage.



System SID

Enter the System IDentifier for the RemoteMaster unit here. This is an ASCII string unique to this unit.

Respond to Invalid SIDs

Selecting Yes will cause the RemoteMaster unit to generate an error response if it receives an invalid SID.

Single Response Block

Selecting No will allow all alarms received simultaneously to be reported in the same autonomous mesage.

Selecting Yes will result in every alarm reporting seperately.

Unique Identifier Usage

The TL1 RemoteMaster is configurable for up to 500 unique SIDS, 2000 unique AIDS, 256 unique EQPTS, and 8272 unique CONDS.

This window reports how many of each of these has been used, and how many are still available. Select View Details to view the entries used so far and how many occurences of that entry.

3. Alarms and Controls

The Alarms page is used to view and edit alarm point definitions. The TL1 database contains different fields. Some of these fields, like the LEVEL and the ENV, have preset choices. Others allow user-definable text:

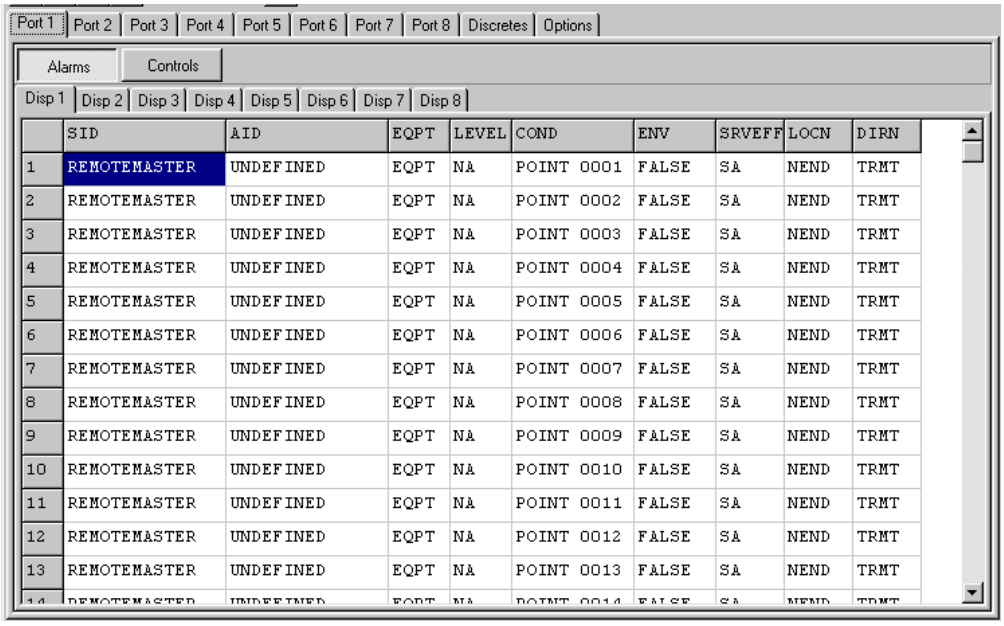
- SID
- AID
- EQPT
- COND

Editing Alarm and Control Point Definitions

Along the top of the Alarms page are ten tabs, one of which, the Options tab, we have already discussed. The remaining nine are labeled Port 1 through Port 8 and Discretes.

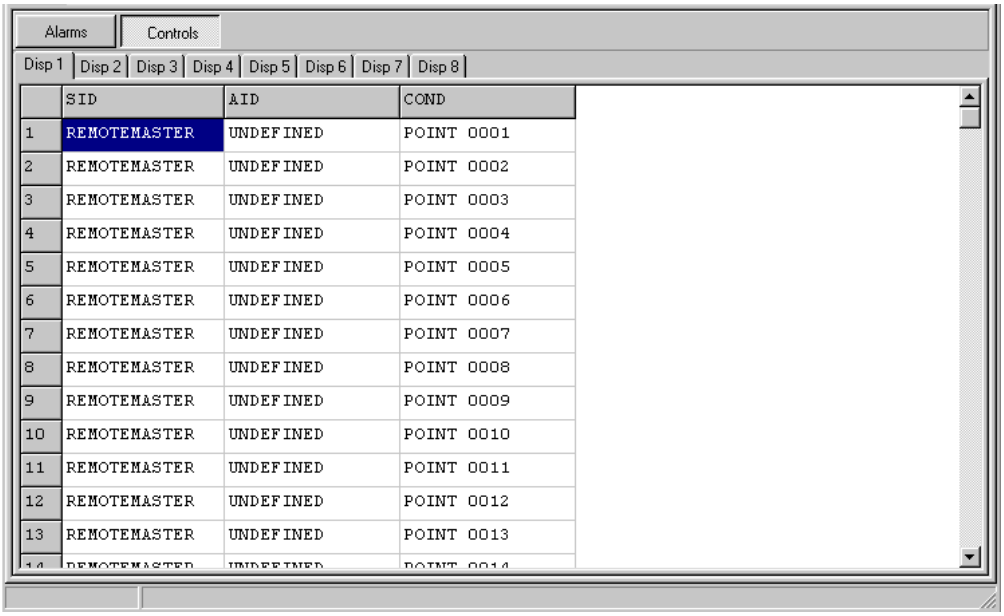
Ports 1 through 8

Selecting any of these tabs allows configuration of the TBOS ports 1 through 8. Each of these is then broken into Alarms and Controls.



	SID	AID	EQPT	LEVEL	COND	ENV	SRVEFF	LOCN	DIRN
1	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0001	FALSE	SA	NEND	TRMT
2	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0002	FALSE	SA	NEND	TRMT
3	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0003	FALSE	SA	NEND	TRMT
4	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0004	FALSE	SA	NEND	TRMT
5	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0005	FALSE	SA	NEND	TRMT
6	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0006	FALSE	SA	NEND	TRMT
7	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0007	FALSE	SA	NEND	TRMT
8	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0008	FALSE	SA	NEND	TRMT
9	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0009	FALSE	SA	NEND	TRMT
10	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0010	FALSE	SA	NEND	TRMT
11	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0011	FALSE	SA	NEND	TRMT
12	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0012	FALSE	SA	NEND	TRMT
13	REMOTEMASTER	UNDEFINED	EQPT	NA	POINT 0013	FALSE	SA	NEND	TRMT

ALARMS PAGE



	SID	AID	COND
1	REMOTEMASTER	UNDEFINED	POINT 0001
2	REMOTEMASTER	UNDEFINED	POINT 0002
3	REMOTEMASTER	UNDEFINED	POINT 0003
4	REMOTEMASTER	UNDEFINED	POINT 0004
5	REMOTEMASTER	UNDEFINED	POINT 0005
6	REMOTEMASTER	UNDEFINED	POINT 0006
7	REMOTEMASTER	UNDEFINED	POINT 0007
8	REMOTEMASTER	UNDEFINED	POINT 0008
9	REMOTEMASTER	UNDEFINED	POINT 0009
10	REMOTEMASTER	UNDEFINED	POINT 0010
11	REMOTEMASTER	UNDEFINED	POINT 0011
12	REMOTEMASTER	UNDEFINED	POINT 0012
13	REMOTEMASTER	UNDEFINED	POINT 0013

CONTROL POINTS PAGE

Select Alarms to configure the TL1 parameters for the alarm points in each of the displays desired in each port.

Select Controls to configure the TL1 parameters for the control points in each of the displays desired in each port.

Discretes

Selecting this tab allows configuration of the 64 discrete alarm inputs and the 16 control points

4. Saving the Database

Once you have completed the configuration of your database, select File, then Save Database As. Enter a descriptive name in the File Name field and click on Save.

To Open an Existing Database

You can open an existing database file by selecting File | Open from the main menu, or clicking the Open Existing Database button on the application toolbar.

After the database is open, the same options that were described in the To Create a New Database part of this section are available.

Transfer

The TL1 Editor can:

- Download a database configured with the TL1 Editor to the RemoteMaster
- Upload a database in a RemoteMaster into the TL1 Editor

Download

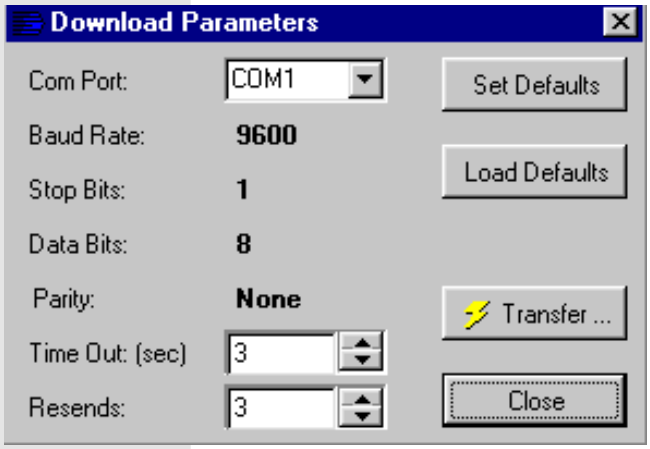
To download a TL1 database into a RemoteMaster module, select Transfer | Download from the Main Menu. This will open the Download Parameters window shown below.

Use the download parameters dialog to configure the communications parameters required for downloading the TL1 database configuration to the RemoteMaster module.

NOTE: *The Baud Rate, Stop Bits, and Data Bits are preset to the requirements of the TL1 RemoteMaster and cannot be changed.*

Com Port

Select the desired Com port.



WARNING:

Aborting a download will cause the RemoteMaster to return to its default settings and any database currently in the unit will be lost.

Time Out

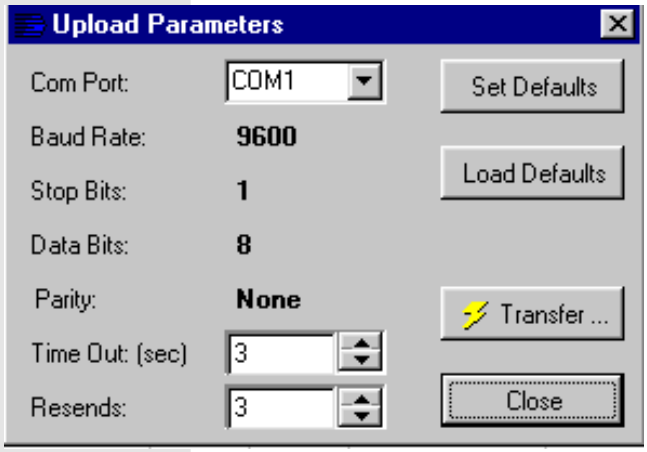
Select the time, in seconds, that the Editor program will wait after issuing a command before declaring a timeout.

Resends

Select the number of attempted message resends before an automatic abort will occur.

UPLOAD

To upload a TL1 database from a RemoteMaster module, select Transfer | Upload from the Main Menu. This will open the Upload Parameters window shown below.



Use the upload parameters dialog to configure the communications parameters required for uploading the TL1 database configuration from the RemoteMaster module.

NOTE: *The Baud Rate, Stop Bits, and Data Bits are preset to the requirements of the TL1 RemoteMaster and cannot be changed.*

Com Port

Select the desired Com port.

Time Out

Select the time, in seconds, that the Editor program will wait after issuing a command before declaring a timeout.

Resends

Select the number of attempted message resends before an automatic abort will occur.

202 MODEM CHECKOUT

Set the proper signal levels on the 202 tone modem subassembly.

To set the levels:

1. Make sure the modem is connected to another modem at the other end of the communications line.
2. Apply power to the ***TL1 RemoteMaster*** and the modem at the distant end.
3. Place the front panel TEST (test) switch on the ***TL1 RemoteMaster*** modem subassembly in the Test (up) position. Verify that the front panel CD (Carrier Detect) LED at the distant end indicates data transmission activity.
4. With a dB meter (bridging), check the signal level at the XMT test points on the ***TL1 RemoteMaster*** modem subassembly. Adjust the XMT LVL to obtain the level required for the application.
5. Place the front panel TST (test) switch in the off (down) position.
6. Check the incoming signal level at the RCV test points on the ***TL1 RemoteMaster*** modem subassembly with a dB meter (bridging). The signal level should be 0 to -40 dBm, depending on the setting of straps on the modem subassembly. There is no other adjustment for this circuit.

TROUBLESHOOTING

FUSES

There is a two-ampere fuse on the front panel of the ***TL1 RemoteMaster***. It protects power going to the ***TL1 RemoteMaster*** and to pins P2-54 and P2-56.

PORT ACTIVITY

Button 2 shows the activity of the interrogator and responder ports on the LED display. Press the button repeatedly to cycle through the ports sequentially to the port you want to monitor. The LED display shows the activity of the selected port. To return to the alarm mode, press button 1.

Interrogator Ports

The LED display shows the letter "P" on the first LED and the number of the interrogator port on the second LED. The fourth LED flashes the letter "t" when the port is transmitting data. The fifth LED flashes the letter "r" when the port is receiving data.

Responder Ports

The LED display shows the letter "r" on the first LED and the number of the responder port on the second LED.The fourth LED flashes the letter "t" when the port is transmitting data. The fifth LED flashes the letter "r" when the port is receiving data.

SYSTEM RESET

If the ***TL1 RemoteMaster*** does not seem to be operating properly, reset the unit by pressing buttons 1, 3, and 5 simultaneously on the front panel.

LED TEST

To test the operation of the front panel LEDs, press the front panel buttons 1 and 3 simultaneously. A "8" will appear on each LED display if all the segments of that LED are working.

TABLE J - CONFIGURATION WORKSHEET

INTERROGATOR PORTS								
PORT #	1st DISPLAY	2nd DISPLAY	3rd DISPLAY	4th DISPLAY	5th DISPLAY	6th DISPLAY	7th DISPLAY	8th DISPLAY
ONE	1	2	3	4	5	6	7	8
TWO	9	10	11	12	13	14	15	16
THREE	17	18	19	20	21	22	23	24
FOUR	25	26	27	28	29	30	31	32
FIVE	33	34	35	36	37	38	39	40
SIX	41	42	43	44	45	46	47	48
SEVEN	49	50	51	52	53	54	55	56
EIGHT	57	58	59	60	61	62	63	64

RESPONDER PORTS											
TBOS RESP. PORT #	BAUD RATE	PARITY	STOP BITS	DISPLAY No. 1	DISPLAY No. 2	DISPLAY No. 3	DISPLAY No. 4	DISPLAY No. 5	DISPLAY No. 6	DISPLAY No. 7	DISPLAY No. 8
1	2400	ODD	1								
2	2400	ODD	1								
3	NOT USED										
4	1200	ODD	1								

1. Mark the Interrogator Ports chart with the displays you will use.
2. Use the Interrogator Ports chart as a guide to fill out the Responder Ports chart.
   - Only fill in the responder ports that will use TBOS protocol.
   - You can fill in the displays in any order; for example: 1, 2, NULL, 29, 14, DISCRETES, 5, 6. Only one display can have discrete alarms.

The TL1 RemoteMaster provides Issue 5 TL1 commands (configuration selectable) and 5 autonomous messages.

SET-ATTR-ENV:SID:AID:CTAG::CR,COND;

SET-ATTR-CONT:SID:AID:CTAG::COND;

SET-ATTR-EQPT:SID:AID:CTAG::CR,COND,NEND,AZ;

RTRV-ATTR-ENV:SID:AID:CTAG::CR,COND;

RTRV-ATTR-CONT:SID:AID:CTAG::COND;

RTRV-ATTR-EQPT:SID:AID:CTAG::CR,COND,NEND,AZ;

RTRV-ALM-ENV:SID:AID:CTAG::CR,COND;

RTRV-EXT-CONT:SID:AID:CTAG::COND;

RTRV-COND-EQPT:SID:AID:CTAG::COND,NEND,AZ;

OPR-EXT-CONT:SID:AID:CTAG::CONT,CONTS;

RLS-EXT-CONT:SID:AID:CTAG::CONT,CONTS;

RTRV-HDR:SID:AID:CTAG;

ALW-MSG-EQPT:SID:AID:CTAG::CR,CONDTYPE;

INH-MSG-EQPT:SID:AID:CTAG::CR,CONDTYPE;

INIT-SYS:SID:AID:CTAG::PH;

RTRV-ALM- EQPT:SID:AID:CTAG::CR,COND,SA,NEND, AZ;

SET-DAT:SID::CTAG::YYMMDD,HHMMSS;

TL1 Autonomous Output Formats

There will be 5 basic types of autonomous messages.

Notes

When more than one message is delivered at a time, the final semi-colon (;) of the message is replaced by a greater-than symbol (>) between the messages. The final message in the string will end with a semi-colon

^ = space

cr = carriage return

lf = line feed

[ ] = optional

... = zero or more occurrences

1. Report Alarm (REPT^ALM)

cr lf lf

^^^SID^YY-MM-DD^HH:MM:SS cr lf

ALMCDE^^ATAG^REPT^ALM^EQPT cr lf

[^^^"AID:LEVEL or NTFCNCDE,COND,EFF,,,LOCN,DIRN" cr lf>]

^^^"AID:LEVEL or NTFCNCDE,COND,EFF,,,LOCN,DIRN" cr lf;

2. Report Alarm Environment (REPT^ALM^ENV)

cr lf lf

^^^SID^YY-MM-DD^HH:MM:SS cr lf

ALMCDE^^ATAG^REPT^ALM^ENV cr lf

[^^^"AID:LEVEL or NTFCNCDE ,COND,," cr lf>]

^^^"AID:LEVEL or NTFCNCDE ,COND,," cr lf;

3. Report Event (REPT^EVT)

cr lf lf

^^^SID^YY-MM-DD^HH:MM:SS cr lf

A^^ATAG^REPT^EVT^EQPT cr lf

[^^^"AID:COND,,,,LOCN,DIRN:,[,CONDDLSCR]" cr lf>]

^^^"AID:COND,,,,LOCN,DIRN:,[,CONDDLSCR]" cr lf;

CONDDLSCR: condition detailed text description

ON_OFF = 0: \" EVENT CLEAR \"

ON_OFF = 1: \" EVENT TRUE \"

4. Report Restoration (REPT^RST)

cr lf lf

^^^SID^YY-MM-DD^HH:MM:SS cr lf

A^^ATAG^REPT^RST^EQPT cr lf

^^^"ALL:IS-NR-SX" cr lf;

5. Report Removal (REPT^RMV)

cr lf lf

^^^SID^YY-MM-DD^HH:MM:SS cr lf

A^^ATAG^REPT^RMV^EQPT cr lf

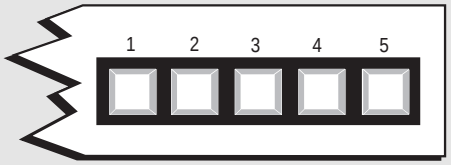
^^^"ALL:OOS-MT" cr lf;

OPERATION

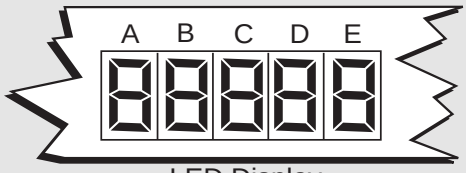
This section contains descriptions on the front panel push buttons, control point operation, alarm reporting, and the 202 modem.

FRONT PANEL PUSH BUTTONS

Five push buttons on the front panel select the type of alarm information that appears on the LED display.



Push Buttons



LED Display

ALARM MODE

Alarm mode is the default mode. Normally the display is in this mode, but if it is not, press button 1 to enter the alarm mode. There are four possible readouts in the alarm mode:

Readout 1 - No alarms and no failed displays.

The LED display shows a rotating dash that moves from left to right.

Readout 2 - Alarms and no failed displays.

The LED display shows the letters "AL" and the number of alarms present.

Readout 3 - No alarms and failed displays.

The LED display shows the letters "Fd" and the number of failed displays.

Readout 4 - Alarms and failed displays.

The LED display toggles between the failed display statement and the alarm display statement.

ALARM LOCATION

Press button 3. The ***TL1 RemoteMaster*** scans all alarm points, stopping when an active alarm is reached. Read the display as follows:

1. **Pxyzz**

   where P = TBOS port
   x = TBOS port number (1-8)
   y = Display number within port
   zz = Point number within display

   -or-

2. **D zz**

   where D = Discrete
   zz = Discrete number

If there are no more alarms, "LOC" appears on the display.

ALARM ACKNOWLEDGEMENT

Press button 4 to acknowledge alarms and reset the change-of-status (COS) relay to the non-alarm mode. “AuCLr” appears on the display.

PORT ACTIVITY

Button 2 shows the activity of the interrogator and responder ports on the LED display. Press the button repeatedly to cycle through the ports sequentially to the port you want to monitor. The LED display shows the activity of the selected port. To return to the alarm mode, press button 1.

Interrogator Ports

The LED display shows the letter “P” on the first LED and the number of the interrogator port on the second LED. The fourth LED flashes the letter “t” when the port is transmitting data. The fifth LED flashes the letter “r” when the port is receiving data.

Responder Ports

The LED display shows the letter “r” on the first LED and the number of the responder port on the second LED. The fourth LED flashes the letter “t” when the port is transmitting data. The fifth LED flashes the letter “r” when the port is receiving data.

SYSTEM RESET

Press buttons 1, 3, and 5 simultaneously on the front panel.

LED TEST

Press buttons 1 and 3 simultaneously. All “8”s appear on the LED display if all the segments are working.

CONTROL POINT OPERATION

Operate control points from a computer that has the appropriate protocol software.

If the protocol of the responder port is either DCP or DCPF, the commands to operate control points are the following:

- **DLON** (direct latch on)
- **DLOF** (direct latch off)
- **DMON** (direct momentary on)
- **SLON** (select latch on)
- **SLOF** (select latch off)
- **SMON** (select momentary on)
- **EXCC** (execute)

The EXCC command executes any of the select commands.

If the protocol of the responder port is either TBOS or TABS, the commands to operate the control points are OPR (operate), RLS (release), and MOM (momentary).

If the protocol of the responder port is TL1, the commands to operate the control points are OPR-EXT-CONT (operate) and RLS-EXT-CONT (release).

ALARM REPORTING

When using DCP or DCPF protocols on a responder port, the ***TL1 RemoteMaster*** reports alarms as follows:

- Base Address = TBOS ports 1-4 (32 displays)
- Base Address + 1 = TBOS ports 5-8 (32 displays)
- Base Address + 2 = Discrete alarms - Lines 1, 2
- Base Address + 2 = Controls - Line 65

202 MODEM

To check the 202 tone modem:

1. Make sure the modem is connected to another modem at the other end of the communications line.
2. Apply power to the ***TL1 RemoteMaster*** and the modem at the distant end.
3. Place the front panel TEST (test) switch on the ***TL1 RemoteMaster*** modem subassembly in the on (up) position. Verify that the front panel CD (Carrier Detect) LED at the distant end indicates data transmission activity.

CONTINUED . . .

4. With a dB meter (bridging), check the signal level at the XMT test points on the ***TL1 RemoteMaster*** modem subassembly. Adjust the XMT LVL to obtain the level required for the application.
5. Place the front panel TST (test) switch in the off (down) position.
6. Check the incoming signal level at the RCV test points on the ***TL1 RemoteMaster*** modem subassembly with a dB meter (bridging). The signal level should be 0 to -40 dBm, depending on the setting of straps on the modem subassembly. There is no other adjustment for this circuit.

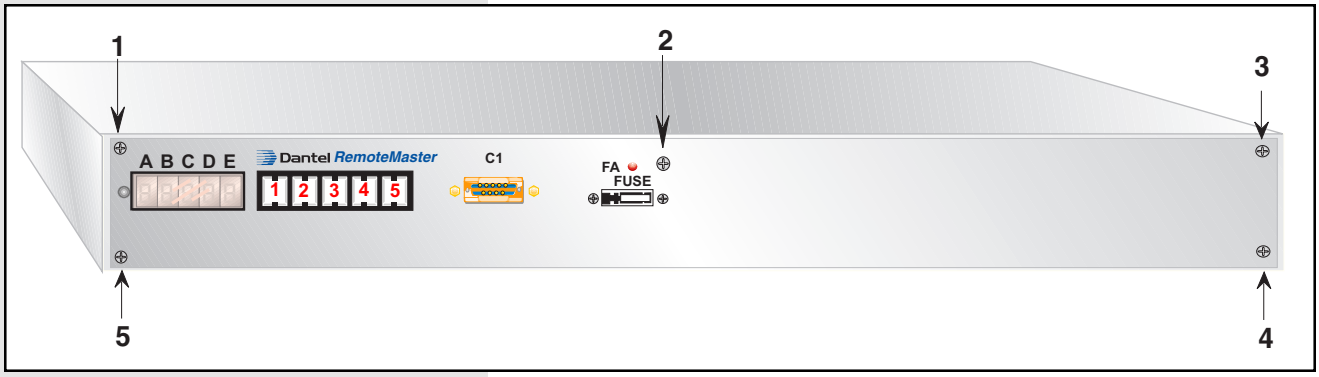
CIRCUIT BOARD REPLACEMENT

The wiring on the ***RemoteMaster*** does not have to be removed to replace the circuit cards inside the unit.

To Remove the RemoteMaster Main Board

1. Remove the plastic safety cover on the rear by unscrewing the two fastener screws. Set the cover aside.
2. Remove power to the RemoteMaster.
3. Remove the Configuration Module (CM) by unscrewing the two screws, sliding the module out, and unplugging the two ribbon cables. Make a note that the longer of the two cables goes to J5 and the shorter cable goes to J4.
4. Set the CM aside and move to the front of the unit.
5. Remove the five screws indicated in Fig. 12 from the Front Panel (FP) and carefully allow the FP to hang below the RemoteMaster.

FIG. 12 - SCREWS SECURING FRONT PANEL



CONTINUED . . .

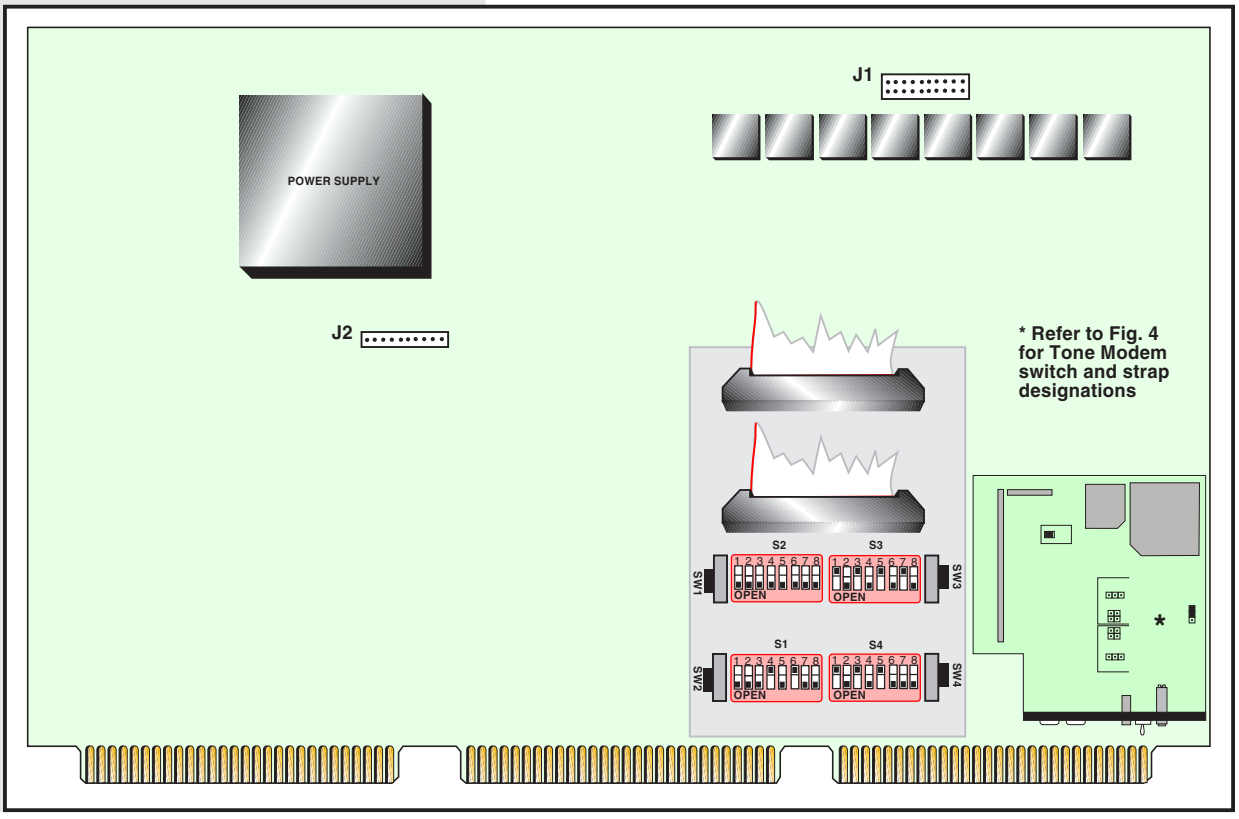
6. Disconnect the power connector. This is the white plastic connector with two wires - one red and one black.
7. Using the handle on the front edge of the Main Board (MB), carefully pull the MB out four inches.
8. There are two cables connecting the FP to the MB. One is a flat grey ribbon cable; the other, a bundle of eight wires of various colors. Holding onto the FP to prevent it from falling, disconnect both of these cables where they plug into the MB. Set the FP aside.
9. The MB can now be completely removed.

To Replace the RemoteMaster Main Board

1. Insert the new Main Board (MB) into the RemoteMaster approximately half way. Take care to ensure that both edges of the MB go into the metal runners on the inside of the chassis.
2. Connect the Front Panel (FP) to the MB by plugging the grey ribbon cable into J1 and the bundle of eight wires into J2. Refer to Fig. 13.

IMPORTANT: *When viewed from the front of the RemoteMaster, the ribbon cable connecting the Front Panel to the Main Board has a red stripe down its left side. When reconnecting this cable to J1 on the Main Board, ensure that this cable does not get twisted and that the red stripe stays on the left side.*

FIG. 13 - LOCATION OF J1 AND J2 ON REMOTEMASTER MAIN BOARD



CIRCUIT BOARD REPLACEMENT

3. Continue pushing the MB into the chassis. Feed the two ribbon cables out the back through the Configuration Module (CM) slot. When fully inserted and seated, the front edge of the MB is approximately 5/32 inches back from the bottom edge of the chassis.
4. Carefully feed the two cables that connect the FP to the MB into the chassis and reinstall the five screws securing the FP to the chassis.
5. Reconnect the two ribbon cables to the CM and reinsert that module, securing it with its two screws
6. Reconnect power and reinstall the plastic safety cover.

TECHNICAL SPECIFICATIONS

DESCRIPTION	VALUE
Input Voltage	-21 to -56 VDC
Input Current, max. (±15%)	
@ -21 VDC	349 mA
@ -24 VDC	328 mA
@ -48 VDC	239 mA
@ -56 VDC	229 mA
Heat Dissipation, max. (±15%)	
@ -21 VDC	27.4 Btu/Hr
@ -24 VDC	29.4 Btu/Hr
@ -48 VDC	42.9 Btu/Hr
@ -56 VDC	47.9 Btu/Hr
Fuse	2 Amp., GMT Type
Auxillary Power Output	
Voltage	Equal to DC Input Voltage
Current	15 mA max.
-DC pins	P2-54, 56
GND pins	P2-53, 55
Serial Alarm Input Ports	
Number available	8
Max. TBOS Displays per Port	8 (512 points)
Protocol	TBOS
Interface	RS-422/485
Data Rate	300, 600, 1200, 2400, 4800, and 9600 baud
Discrete Alarm Inputs	
Number available	64
Input	Optical Coupler Isolated, 33K ohms in series
Signal Input	
Points 1-24	Ground Input
Points 25-32	Current Flow (both sides of optical coupler brought out)
Points 33-64	Ground Input

CONTINUED . . .

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DESCRIPTION	VALUE
Responder Ports	
Number available	3
Protocols	TL1, DCP, DCPF, TBOS, TABS
Ports 1 & 2	
Interfaces	RS-232, RS-422/485
Data Rates	300, 600, 1200, 2400, 4800, and 9600 baud
Port 4 (202 modem)	
Data Rate	1200 baud
Input Level Range	0 to -20 dBm; -20 to -40 dBm
Output Level Range	-1 to -20 dBm; -20 to -40 dBm
Operating Frequencies	
Mark	1200 Hz
Space	2200 Hz
Configuration Port	
Communications	ASCII
Interface	RS-232
Data Rate	9600 baud
Change-of-State (COS) Relay	
Contact Type	Normally Open, Dry Contact
Contact Ratings	1A @ 24 VDC; 0.5A @ 125 VAC
Pins	P2-51, 52
Fuse Alarm Relay	
Contact Type	Normally Open, Dry Contact (one side tied to ground)
Contact Ratings	1A @ 24 VDC; 0.5A @ 125 VAC
Pins	P2-50
Control Output Relays	
Contact Type	8 Normally Open, Dry Contact; 8 Normally Open or Closed
Contact Ratings	1A @ 24 VDC; 0.5A @ 125 VAC
Weight	5.8 pounds
Physical Dimensions	1.75"H x 17.0"W x 12.5"D
Operating Temperature Ranges	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

Dantel

P.O. Box 55013 • Fresno, CA 93747-5013 Phone (559) 292-1111 Fax (559) 292-9355 http://www.dantel.com