

Model T1-MB

Main Board Assembly

for FireSpy® Tracker 1000 Control Panel

SAFETY MESSAGE TO INSTALLERS

People's lives depend on your safe installation of our products. It is important to read, understand and follow all instructions shipped with this product. Listed below are some other important safety instructions and precautions you should follow.

- This unit must be installed and maintained by a qualified electrician in accordance with NFPA 72 and National and local Electrical and fire codes, under the direction of the authority having jurisdiction.
- Do not connect this unit to system wiring when circuits are energized.
- After installation and completion of initial system test, provide a copy of this instruction sheet to all personnel responsible for operation, periodic testing and maintenance of this equipment.
- Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death to you and others.

GENERAL

The T1-MB main circuit board assembly (MB) is the core of the Tracker 1000 panel. It contains the main board and power supply mounted on an aluminum chassis.

The MB contains the following input and output circuits:

- One analog addressable loop circuit with T-Spy, I-Spy, Apollo, or System Sensor protocol.
- Three circuits that can be programmed for the following modes:
 - o Class A or B NAC (steady, temporal coding, or march time coding)
 - o Auxiliary power supply (resettable or continuous)
 - o Auxiliary input
- One Class B communications circuit (RS485) for connection to expansion modules
- Three form C common relay contacts: trouble and two programmable
- One output for a T8-RC relay module chain
- One USB port
- Two phone lines used by on-board DACT
- Auxiliary input/output

The MB mounts in the main panel enclosure or other UL864 listed enclosure.

Specification	Rating
Communications wiring	
Protocol	RS485
Impedance, max	100 ohms
Capacitance, max	.3uF

Table 2: Local network circuit specifications

Specification	Rating
Protocols	T-Spy, I-Spy, Apollo, System Sensor
Output voltage	32VDC @ 10kHz
Output current, max	400mA
Impedance, max	40 ohms
Capacitance, max	0.5uF

Table 3: SLC circuit specifications

Specification	Rating
Listed	ETL, Standard UL864
Use / Environment	Commercial / Indoor, dry
Temperature range	32 to 120° F
Maximum relative humidity	93%
Primary power (AC)	
Voltage	120VAC @ 50 or 60 Hz 240VAC @ 50 or 60 Hz
Current draw (max)	1.8A @ 120VAC 1.15A @ 240VAC
Secondary power (battery)	
Battery type	Sealed lead-acid
Voltage	24VDC (two 12V batteries)
Charge capacity	7 to 40 Ah
Current draw, max*	4A
Charger type	Multi level float charger
Charge current	1.6A max
Charge voltage	27.3VDC max
Earth ground detection	
Lower threshold (trouble)	10k ohms
Upper threshold (normal)	2.2M ohms
Operating current (MB and PDC)	
Standby	190 mA
Alarm	211 mA

* This is also the maximum current available to the total system.

Table 1: General specifications

Specification	Rating
Output modes	
Output voltage	Regulated 24 DC
Output current, max	1.8A
NAC mode	
End-of-line resistance	10k ohms (Class B only)
NAC: Input mode	
Input voltage	Regulated 24 DC
Input current draw*	5mA

* Inherently power limited

Table 4: NAC circuit specifications

Specification	Rating
Output modes	
Output voltage	Regulated 24 DC
Output current, max	.02A
NAC mode	
End-of-line resistance	10k ohms (Class B only)
Input mode	
Input voltage	Regulated 24 DC
Input current draw*	5mA

* Inherently power limited

Table 5: AUX IO circuit specifications

Specification	Rating
Type	Form C
Contact ratings	
Resistive load (PF=1.0)	0.6A @ 30VDC

Table 6: Relay outputs specifications

LED number	State	Description
1	Flashing	CPU is operating normally
2	ON	An alarm condition is active
3	ON	A supervisory condition is active
4	ON	A trouble condition is active
5-6		Not used
7	OFF	SLC does not have power
	ON	SLC has power but no communication
	Flashing	SLC is communicating normally
8	OFF	RS485 is not communicating
	Flashing	RS485 is communicating normally

Table 7: LED indications

INSTALLATION

Refer to the Tracker 1000 installation manual for battery calculations and other additional requirements for installing the assembly in the fire panel

system.

Mounting

The MB mounts in a UL864 Listed enclosure. The installation location should be reasonably free of dust, vibration, and moisture. To avoid degradation of the operating circuitry, it is recommended that the MB be removed during cabinet mounting, wire installation, and any other procedures that may introduce dust, metal shavings, grease or any other foreign matter into the area of the electronic circuitry.

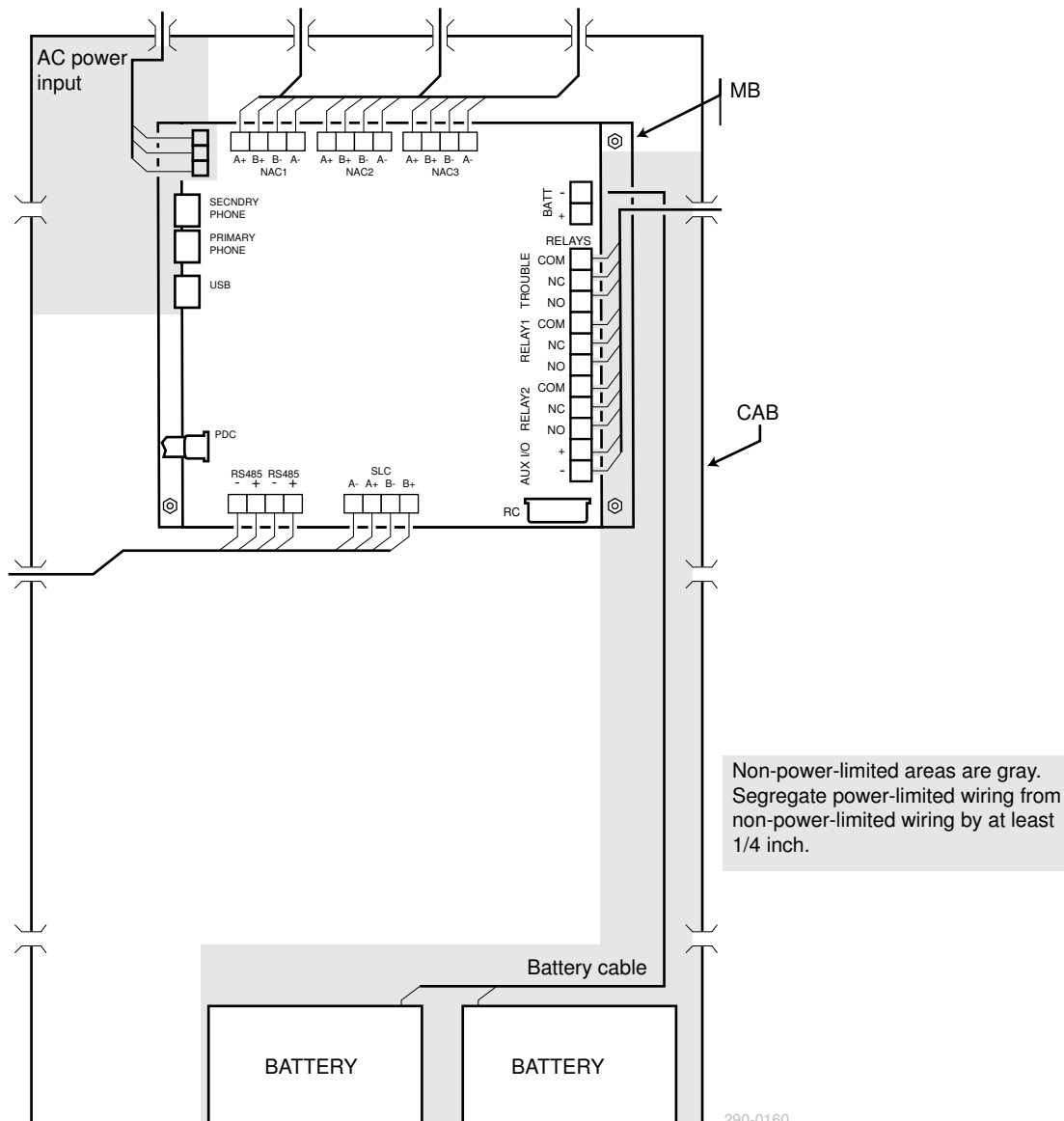
1. Install the enclosure according to the manufacturer's installation instructions.
2. Mount the chassis assembly inside the enclosure using four #8 nuts.
3. Secure the ground wire to the backbox grounding stud with a nut.

Wiring

WARNING

To reduce the risk of electrical shock, make sure that all power has been turned off or disconnected prior to attempting to install wiring or connect power.

1. See Figure 1 for wiring.
2. Set SW1 to match the types of devices used on the SLCs (see Table 8).



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Figure 1: Wire routing

3. Configure J4 according to the wiring type on the SLCs. For Class B, install the two jumpers; for Class A, remove the two jumpers.

OPERATION

Refer to the control panel documentation for maintenance, testing, operation and programming details.

ORDERING INFORMATION

Model	Stock No.
T1000 main board chassis assembly	T1-MB
T1000 main cabinet	T1-CAB
PDC Main LCD Panel Annunciator	T-PDC
Keyswitch Enable	440-0740

Switch number	Programmed Mode (ON position)
1	Disable buzzer
2	Enable extended alarm confirmation polling ¹
3	Enable power-up SLC pulsing ²
4	Enable System Sensor protocol
5	Enable Apollo / I-Spy protocol
6	Factory reserved. Leave OFF
7	Enable T-Spy protocol
8	ON = Non-operating mode: firmware loading OFF = Normal panel operation

1. Extended alarm confirmation polling prevents false alarms for SLC wiring that is faulty or non-twisted pair. Applies to Apollo, I-Spy, and T-Spy.
2. Power-up pulsing reduces power surges which may cause SLC overload faults when isolator modules are installed.
- 3 For switches 4, 5, and 7: Set to ON to include the designated protocol in the SLC messaging. Set to OFF to ignore devices for the designated protocol.
4. Refer to markings on switch for ON and OFF positions.

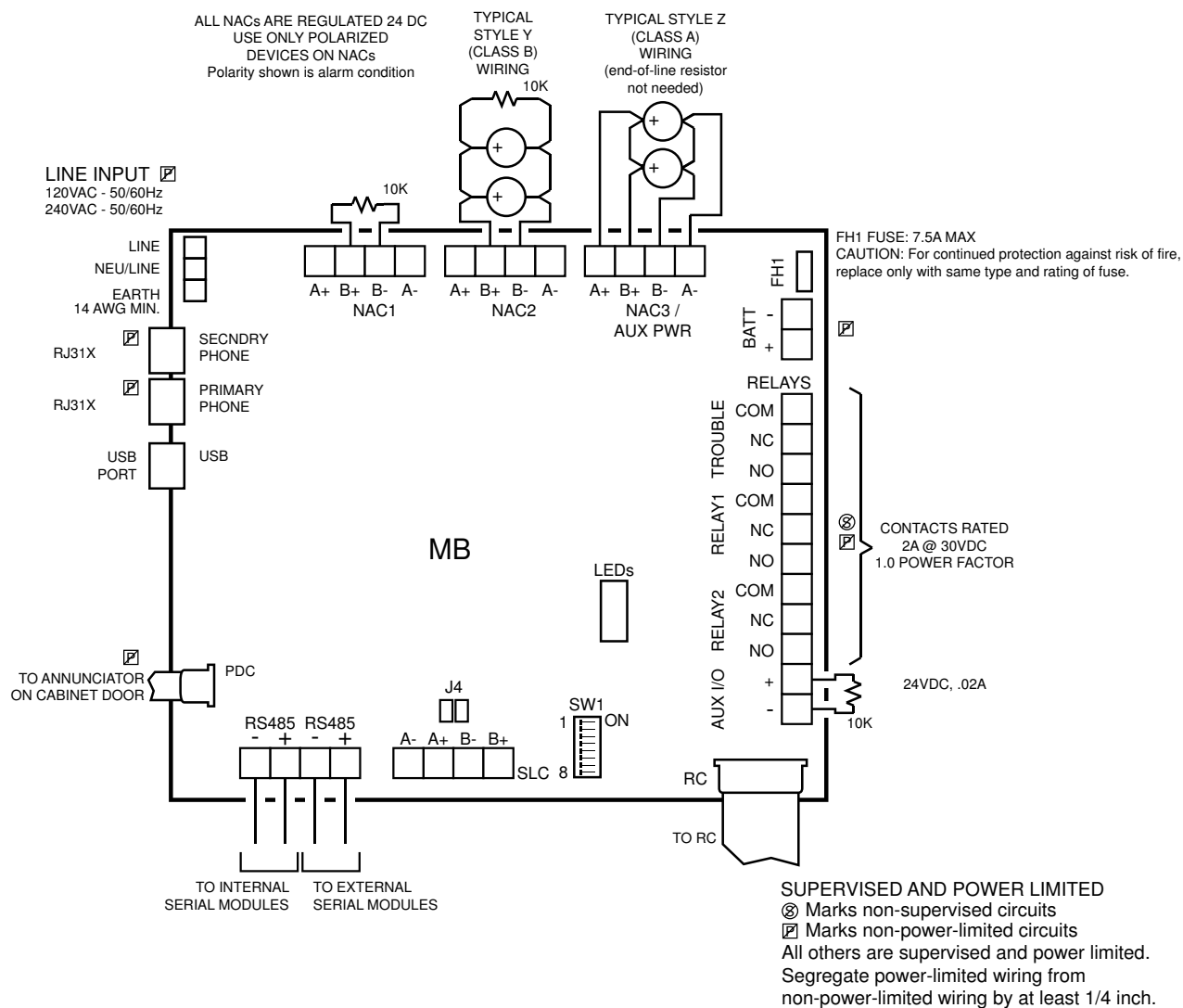
Table 8: DIP switch settings (MB SW1)

SERVICE

To get help with problems or questions not covered in these instructions, contact:

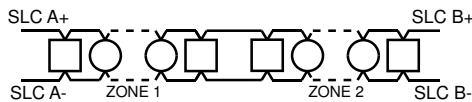
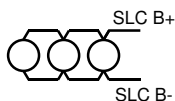
Technical Service Department
Harrington Signal Inc.
2519 - 4th Avenue
Moline, IL 61265
(800) 577-5758

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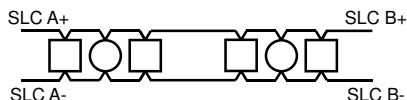


Example SLC wiring

TYPICAL STYLE 4 (CLASS B) WIRING
J4 jumpers present

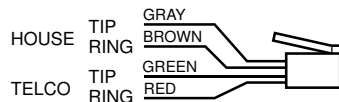


TYPICAL STYLE 6 (CLASS A) WIRING
Isolators (optional) separate each zone
Remove J4 jumpers



TYPICAL STYLE 7 (CLASS A) WIRING
Isolators separate each detector
Remove J4 jumpers

Example RJ31X wiring



NOTES:

- 1) Use only smoke detectors that are in the compatibility list in the owner's manual.
- 2) Leave end-of-line resistors on unused circuits.
- 3) Combined load of all devices, including indicating appliances, is not to exceed 4A.

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Figure 2: Wiring on MB