Westronic

Universal Annunciator Panel

994-T052 Rev E February, 2001

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Technical Manual

Technical Manual

NOTICE

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REGULATORY INFORMATION

WARNING: This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the installation manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15, Subpart J of the FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of the equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

CAUTION: Changes or modifications not expressly approved by Westronic could void the user's authority to operate this equipment.

The FCC label can be found on the right side of the shelf assembly. The label includes the following information:

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

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Revision History

Rev Level	Issue Date	Reason for Reissue
A	March, 1997	First Release
B	July, 1998	Alarm Timer 517-T016 added to enable variable audible alarm durations (2.5, 5, 10, 20, and ∞ seconds)
C	June, 1999	Format changes, conversion to FrameMaker
D	September, 1999	Alarm timer 517-T018 replaces 517-T016; include elements of SPEC-0166, Rev A; include four additional C1000 part numbers; fusing requirements; ***new information indicated with change bars***
E	February, 2001	Format changes, conversion to MS Word, Logo update

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1 Purpose

The Universal Annunciator Panel provides simultaneous audible and visual notification of alarms reported by a combination of up to eight separate devices. Designed specifically for Westronic Remote Telemetry Units (RTUs), such as C1000, WS1000, WS2000, and WS3000, the panel is not limited to these applications nor does it rely on them for operating power.

Each of the eight alarm inputs drives its own LED. However, any additional alarm input triggers the audible annunciator. The audible annunciator provides a loud tone to indicate the arrival of a new alarm. The tone continues until an alarm timer expires, the alarm cutoff button is pressed, or all alarms for all inputs have cleared.

Units shipped prior to August, 1998, did not have an alarm timer. On those units, the tone continued until all inputs cleared. All units have an alarm cutoff button that silences the audible annunciator until the unit receives a new alarm.

Current units have a timer module to control the time period that the alarm buzzer sounds. Through Z1/Z2 option jumper settings, you can set the alarm buzzer to sound for 2 seconds, 8 seconds, 16 seconds, or an infinite (continuous) time. The timer module turns the alarm buzzer On when the annunciator panel receives an alarm input and silences the alarm buzzer if the alarm input clears before the end of the set time period (*timeout*).

2 Mounting

The Universal Annunciator Panel is 1 VU (1.75 inches) in height and mounts in a standard 19-inch communications rack. Rack adaptors come with each unit to extend the unit width to accommodate mounting in a 23-inch communications rack. You can mount the panel flush with the rack or with a front extension by positioning the mounting ears on the main assembly in either the front or rear positions.

3 Electrical Connections

Figure 1 shows the location of all rear-panel electrical connectors.

TB1 is reserved for future expansion. While the terminal block provides DC voltages (+5 Vdc, –9 Vdc) and ground, Westronic does not recommend using these voltages to power foreign devices.

WARNING: Westronic is not responsible for damage to the alarm panel or any non-approved devices resulting from connections to TB1.

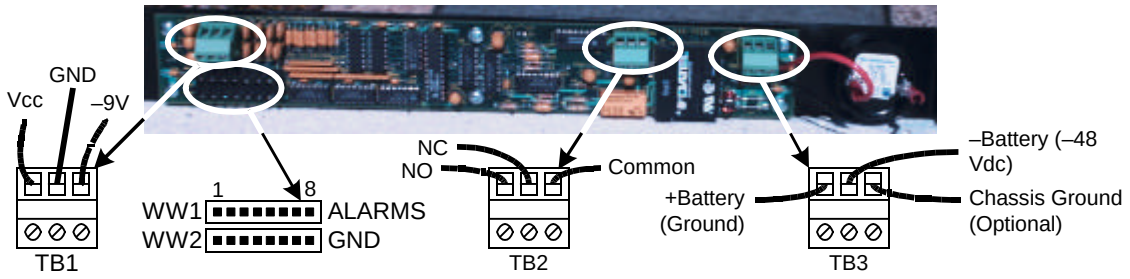


Figure 1 Rear View of the Universal Annunciator Panel

Make alarm input connections at the **ALARMS** and **GND** wire-wrap connectors, **WW1** and **WW2**. Pins 1 through 8 of both **WW1** and **WW2** are for **ALARM** LEDs **1** through **8**, respectively. A connection applied from **WW1-1** to **WW2-1** illuminates LED 1 and triggers the alarm audible annunciator.

TB2 is a summary alarm output (normally open contacts, normally closed contacts, and common – "Form C") to enable attaching an external unit to the annunciator panel. This output is rated at 2 Amps (24 Watts maximum switching). **TB2** provides an alarm output any time that at least one alarm LED is On. The alarm relay remains On until all LEDs clear or the Alarm Cut Off (**ACO**) button is pressed.

Input power (–20 Vdc to –72 Vdc, fused at 0.5 Amps) is applied to **TB3**. Pin 1 is **+Batt**, Pin 2 is **–Batt**, and Pin 3 is chassis ground.

WARNING: Use caution when making wire connections on the rear of the Annunciator Panel. Small bits of wire or other debris could fall into units mounted lower in the equipment rack. Westronic is not responsible for damage caused by debris falling into this or other equipment.

4 Operation

Refer to Figure 2 for front panel controls and operations.

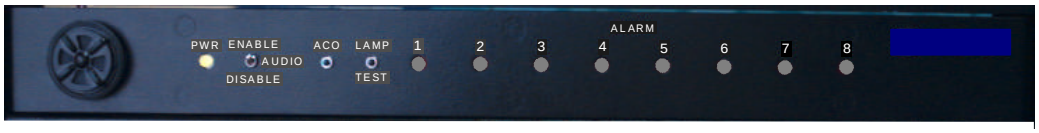


Figure 2 Front View of the Universal Annunciator Panel

The audible annunciator has a rotating baffle that moderates the tone level. Close or open the rotating annunciator vanes to achieve the desired damping effect.

The **PWR LED** lights green when the power lead connections are correct and lights red when the power lead connections are reversed. Be sure the LED lights green after applying power. The panel has reverse polarity protection, but operates properly only when the voltage is correctly applied.

Moving the **AUDIO** switch to the down position (**DISABLE**) disables the audible alarm until it returns to the up position (**ENABLE**). The switch has no other affect on panel operation, including the alarm output at **TB2**. The **AUDIO** switch *always* enables or disables the audible alarm regardless of any alarms or timer settings. While the audible alarm is disabled, the visual alarm indication continues to operate normally.

The **ACO** button *always* silences the audible alarm regardless of previous alarms or timer settings and disables **TB2**. However, a new alarm that arrives after **ACO** is depressed activates the buzzer.

The **LAMP TEST** pushbutton tests all LEDs when pressed.

The **ALARM** LEDs visually indicate an existing alarm condition on each of the eight incoming alarm lines. When the annunciator panel receives an alarm (relay closure) from an RTU, the appropriate front-panel **ALARM** LED lights red and the audible alarm sounds. The **ALARM** LEDs *always* report the raw state of the alarm regardless of the state of the buzzer: On = alarm point closed; Off = alarm point open.

The audible alarm sounds until disabled by the alarm timer, the **ACO** button is pressed, or *all* alarm inputs clear and does not sound again until receipt of another alarm. However, the **ALARM** LED remains lit until the alarm input is removed. Table 1 provides an overview of alarm panel behavior.

Table 1 Alarm Panel Behavior

Inputs	LED 1 (Note 1)	LED 2 (Note 1)	Annunciator	Timer Duration (Note 2)	TB2 (Note 3)
New Alarm Input # 1	On	Off	On	∞	On
New Alarm Input # 2	On	On	On	∞	On
ACO Button Depressed	On	On	Off	∞	Off
New Alarm #2 on Input #1	On	On	On	∞	On
Alarm on Input #2 Clears	On	Off	On	∞	On
All Alarms on Input #1 Clear	Off	Off	Off	∞	Off

Notes:

1. The LED blinks once each time the annunciator panel receives a new alarm on that input.
2. If the timer is set to 2-, 8-, or 16-second duration, the annunciator sounds for that time period after receiving an alarm. When the timer expires, the annunciator remains silent until the alarm panel receives a new alarm. With a setting of ∞, the annunciator remains On until *all* alarms clear or you press the **ACO** button.
3. The relay connected to **TB2** energizes when the annunciator is on.

The annunciator stops if an incoming alarm clears at its source. However, if an alarm comes in and is silenced through the **ACO** button and a second alarm occurs that is silenced at its source, the annunciator remains on until the original alarm clears.

- The **ACO** button de-energizes the relay connected to **TB2**.
- The **AUDIO ENABLE/DISABLE** switch has no influence on **TB2** operation.

In the following examples, only the alarms described exist in the example. Unless noted otherwise, each example operates as described regardless of Z1/Z2 option jumper settings. By definition, timeout is a 2-, 8-, or 16-second alert period or a continuous (∞) alert period, as determined by Z1 and Z2 settings.

Example 1

An alarm appears and goes away, existing for only 50 milliseconds.

- 150 milliseconds after alarm detection, the buzzer sounds.
- The buzzer sounds for 150 milliseconds.
- The buzzer becomes silent.

Purpose: Even very brief alarms have an audible response.

Example 2

An alarm appears and remains for a period greater than the timeout setting – Z1/Z2 set for 2, 8, or 16 seconds.

- 150 milliseconds after alarm detection, the buzzer sounds.
- The buzzer remains On for the set timeout period (2, 8, or 16 seconds).
- The buzzer becomes silent.

Purpose: Incoming alarms can have a limited annunciation time.

Example 3

An alarm appears and remains without ceasing – Z1/Z2 set for continuous (∞) annunciation.

- 150 milliseconds after alarm detection, the buzzer sounds.
- The buzzer remains On continuously.

Purpose: Incoming alarms can have a continuous annunciation time.

Example 4

An alarm appears and goes away after any period greater than 50 milliseconds – Z1/Z2 set for continuous (∞) annunciation.

- 50 milliseconds after alarm detection, the buzzer sounds.
- The buzzer remains On for a minimum of 150 milliseconds.
- The moment that the alarm disappears, the buzzer becomes silent.

Purpose: Although set for continuous annunciation, annunciation ceases when the alarm goes away.

Example 5

An alarm appears and disappears before the buzzer times out.

- 150 milliseconds after alarm detection, the buzzer sounds.
- The moment that the alarm disappears, the buzzer becomes silent.

Purpose: Cleared alarms immediately silence the buzzer.

Example 6

Before the timer expires on a first alarm, a second alarm appears on the same or another input.

- 150 milliseconds after detection of the first alarm, the buzzer sounds.
- After detection of the second alarm, the buzzer becomes silent for 150 milliseconds.
- The buzzer sounds again and remains On for the set timeout period (2, 8, or 16 seconds).

  Note: The timeout period begins again on detection of the second alarm.
- The buzzer becomes silent.

Purpose: Subsequent alarms provide an audible indication of their arrival and reset the timer on the latest arriving alarm.

Example 7

Before the timer expires on a first alarm, a subsequent alarm appears and disappears.

- 150 milliseconds after detection of the first alarm, the buzzer sounds.
- After detection of the second alarm, the buzzer becomes silent for 150 milliseconds.
- The buzzer sounds again, but the second alarm disappears.
- The buzzer resumes using the timeout period (2, 8, or 16 seconds) of the first alarm.
- The buzzer becomes silent.

Purpose: Subsequent alarms of very short duration do not silence a previous alarm if the previous alarm timer has not expired (as occurred in Example 6).

Example 8

An alarm appears and the annunciator times out before a second alarm appears on the same or another input.

- 150 milliseconds after detection of the first alarm, the buzzer sounds.
- The buzzer sounds until the timer expires, then becomes silent.
- 150 milliseconds after detection of a second alarm, the buzzer sounds.

- The buzzer sounds until the timer expires.
- The buzzer becomes silent.

Purpose: Subsequent alarms on a single channel have an audible announcement regardless of whether the **ACO** button on the annunciator panel has been depressed.

Example 9

All alarms disappear.

- The buzzer becomes silent regardless of time remaining for any individual alarm.

Purpose: Cleared alarms immediately silence the buzzer.

5 Applications

The alarm panel is designed for use with all Westronic WS2000 and WS3000 RTUs and any unit that has a change-of-state (dry-contact closure) relay output. The panel can also operate with selected Westronic WS1000 and C1000 RTUs shown in Table 2.

Table 2 Applicable WS1000 and C1000 Units With Summary Alarm Option

WS1000 Part No.	C1000 Part No.	RTU Specifications
–	594-T087	TABS w/32 Discretes/4 Controls/RS-422/485
–	594-T088	TABS w/32 Discretes/4 Controls/202T Modem
–	594-T100	TABS w/32 Discretes/4 Controls/RS-232
594-T083	594-T089	TABS w/64 Discretes/8 Controls/RS-422/485
594-T084	594-T090	TABS w/64 Discretes/8 Controls/202T Modem
–	594-T101	TABS w/64 Discretes/8 Controls/RS-232
594-T085	594-T091	TABS w/128 Discretes/16 Controls/RS-422/485
594-T086	594-T092	TABS w/128 Discretes/16 Controls/202T Modem
–	594-T102	TABS w/128 Discretes/16 Controls/RS-232
–	594-T093	TABS w/256 Discretes/32 Controls/RS-422/485
–	594-T094	TABS w/256 Discretes/32 Controls/202T Modem
–	594-T103	TABS w/256 Discretes/32 Controls/RS-232

The following are examples of connections to standard Westronic equipment.

Note: The WS1000 and C1000 units must be configured through DIP-switch settings to generate alarms. Only the specific units listed in Table 2 have the ability to report alarms to the Universal Annunciator Panel. Refer to the specific RTU manual for detailed configuration and connection information.

A Westronic WS1000 or C1000 TABS remote with eight control outputs could be wired as follows:

From WS1000	**To UAP Alarm 2 LED**
E13 (**C8**)	WW1-2 (**ALARMS**)
F13 (**C8R**)	WW2-2 (**GND)**
From C1000	**To UAP Alarm 3 LED**
J2-4 (**C8**)	WW1-3 (**ALARMS**)
J2-29 (**C8R**)	WW2-3 (**GND)**

A Westronic WS1000 or C1000 TABS remote with 16 control outputs could be wired as follows:

From WS1000	**To UAP Alarm 5 LED**
A16 (**C8**)	WW1-5 (**ALARMS**)
B16 (**C8R**)	WW2-5 (**GND)**
From C1000	**To UAP Alarm 6 LED**
J4-4 (**C8**)	WW1-6 (**ALARMS**)
J4-29 (**C8R**)	WW2-6 (**GND)**

A Westronic WS2000 TABS could connect as follows:

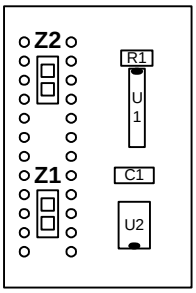
From WS2000	**To UAP Alarm 7 LED**
TB1-5 (**COS** normally open)	WW1-7 (**ALARMS**)
TB1-7 (**COS** return)	WW2-7 (**GND)**

6 Alarm Timer Module Settings

Mounted directly on the back of the audible annunciator device, the alarm timer module controls the duration of the audible alarm indication.

Note: The unit is shipped with the jumpers in the default [∞ (infinity)] position.

The user sets the duration of audible alarm notification by placing a jumper on Z1, Z2, both, or none. See Figure 3 for further information.



Z1	Z2	Timeout
Off	Off	2 Seconds
Off	On	8 Seconds
On	Off	16 Seconds
On	On	Infinite (Continuous)

On = Jumper Installed; Off = Jumper Not Installed

Figure 3 Timer Board Module and Jumper Settings

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