

TechALERT®

Patent Pending

Operation Manual



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Equipment for the Most Productive Technicians in the World

Visit www.rtech.com for the most up to date information.

035-81411-00 (REV F)

Purchase Information

Date of Purchase: _____

Sales Representative: _____

Base Module Serial Number: _____

Remote Module #1 Serial Number: _____

Remote Module #2 Serial Number: _____

Remote Module #3 Serial Number: _____

Remote Module #4 Serial Number: _____

FCC ID: XJM-TECHALERT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interferences that may cause undesired operation.

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CONGRATULATIONS

You have purchased one of the finest tools to increase productivity in your workshop.

Fill out and return the Warranty Card within 30 days to activate warranty and free lifetime technical support.

Theory of Operation

TechALERT[®] Technician Productivity Enhancement Technology

Having a technician “tied” to a machine during its entire service cycle is an inefficient use of shop manpower. Similarly, equipment that sits idle once a service is complete or when it needs attention during a service due to the occurrence of a fault condition is inefficient as well. RTI provides the solution by offering TechALERT[®], an exclusive patent-pending wireless communication tool designed to enhance shop productivity.

TechALERT[®] sends a wireless signal to a remote carried by a technician and provides operation and completion status with visual, audible and vibration alerts so that equipment can be attended to in a timely manner. Up to four (4) distinct RTI TechALERT[®] compatible machines can be monitored simultaneously by one TechALERT[®] remote.

Once a TechALERT[®] remote is synchronized to a base unit, the remote will receive signals from the equipment to indicate the status of the cycle. The remote will indicate when the equipment is in a normal running mode, a fault condition is present, or the cycle is complete. A paging function is also included to notify a technician or to locate a lost remote.

COMPONENTS

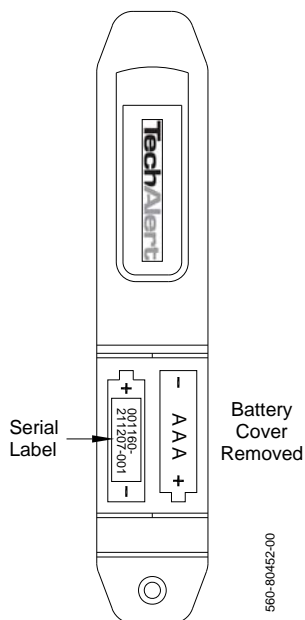


- 1 Remote Module
- 2 Base Module
- 3 Base LED
- 4 Base Push Button
- 5 Sync Target
- 6 Remote LED's
- 7 Remote Push Button
- 8 Sync Target
- 9 Pocket Clip

BATTERY INSTALLATION

- 1) Remove the screw on the rear of the TechALERT® Remote Module and remove the cover to access the battery compartment.
- 2) Insert two alkaline AAA batteries. Note the polarity markings and install each battery correctly. NOTE: An audible beep will be heard when the batteries are installed correctly.
- 3) Replace the battery cover and install the screw. Do not over-tighten as the case may be damaged.

Note: The illustration shows the serial number label which is visible when the battery is removed.



CAUTION: The batteries should be removed from the TechALERT® Remote Module if it will not be used for an extended period of time.

Battery Life: Typical battery life, under normal operating conditions, is at least 30 days. Several factors may affect the actual amount of life you get from the batteries. For the most efficient battery life, the user should respond to and silence any alerts as soon as they are received. The user should also put the remote in "Sleep Mode" at any point of extended inactivity including lunch breaks and especially at the end of each day. NOTE: Refer to the "Remote Deep Sleep Mode" section.

BASE MODULE INSTALLATION

TechALERT® enabled equipment will have a location designated for mounting the Base Module. See separate mounting instructions (560 80471 00) to attach the Base Module to a specific unit.

SYSTEM OPERATION

The TechALERT® system consists of a Base Module which is mounted on the service equipment to be monitored and one or more portable Remote Module(s).

The service equipment is connected to the Base Module by way of a control cable. Various signals from the service equipment are sent to the Base Module where they are transmitted wirelessly to any Remote Modules that are synchronized with that base unit. There may be several types of signals from the service equipment such as:

- 1) Process is running
- 2) Abnormal or fault condition occurred
- 3) Service process is complete

Each piece of service equipment to be monitored requires a Base Module connected to it. However, each Remote Module can monitor from one to four different Base Modules. Another option is having more than one Remote Module monitoring the same piece of service equipment.

The Remote Module has four indicator LED's – one for each monitored Base Module. Each of these LED's can be illuminated in three different colors. Typical color variations will indicate the following:

- 1) Green – process proceeding normally
- 2) Red – abnormal condition, attention required
- 3) Alternating Green and Orange – process complete

The Remote Module will vibrate and also emit an audible beep to alert the technician of status changes.

The Remote Module will flash repeatedly if it is out of range and can not receive signals from the Base Module.

REMOTE MODULE FUNCTIONS

Programming and some operations such as Status Check are accomplished through the use of the Push Button on the Remote Module. As you press and hold the Remote Push Button in the depressed position, all four LED's will flash simultaneously, alternating between all red and all green at approximately 3-second intervals. Different activities are triggered by releasing the Push Button after the appropriate number of simultaneous flashes. Specific procedures are described in detail in the sections that follow.

CONFIGURATION POSSIBILITIES

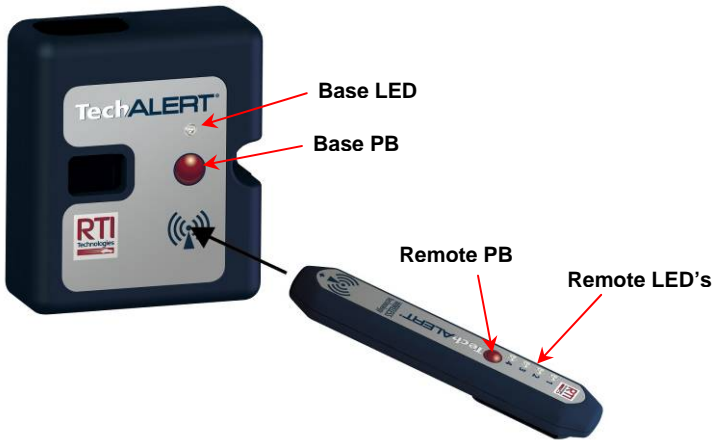


One Base Module can communicate with multiple Remote Modules



One Remote Module can communicate with multiple Base Modules

SYNCHRONIZATION



Communication between the Base Module and a Remote Module is enabled through a synchronization routine. This is initiated by placing the lower end of a Remote Module with the Base Module at the target. Each unit has a picture of a target on the decal. The target on the Remote Module has an arrow to indicate the actual sync point on the bottom of the remote. Place the lower end of the Remote Module against the target on the Base Module to activate synchronization.

Synchronization Steps

1. Make contact with the bottom of the remote and the target on the Base Module. When the synchronization mode is activated, the base LED will continually flash green for (1) second and then pause for (1) second. It may be necessary to move the remote around in a circle while contacting the target to initiate the synchronization mode. Once activated, you have 20 seconds to finish the synchronization procedure.
2. Press and hold the Remote Push Button for (4) consecutive flashes of all 4 LED's (the remote LED's will alternate between red and green flashes). Release the Remote Push Button. The #1 LED will illuminate green indicating that you would like to synchronize the Base Module to this remote in the #1 LED position. If you would like to assign the unit to any other remote LED position, press and hold the Remote Push Button for (1) second and release to advance to the next LED position. Repeat this advancing process until the desired LED is lit. Once you locate the desired LED position, place the bottom of the remote against Base Module target. Synchronization is complete once the green LED on the Base Module stops flashing.

SYNCHRONIZATION (Continued)

Checking the Remote for Synchronization with Base Modules

Press and hold the Remote Push Button until all four LED's light and release the push button. The status of all 4 LED's are shown at the same time to indicate which LED has an assigned status based on the following:

- Solid Red LED – no assignment
- Solid Green LED – channel is assigned and currently active

Desynchronizing a Remote from a Base Module

Press and hold the Remote Push Button for (3) consecutive flashes of all 4 LED's and then release the push button. The status of channel assignment is based on the following:

- Solid Green LED – Channel is assigned
- Solid Orange LED – Channel is assigned, but monitoring is ignored
- Solid Red LED – Channel is not assigned

When entering Desynchronization mode, the #1 channel indicates its status first. To advance to the next channel, press the push button for one second and then release. Continue with this process to advance to the desired channel. To change channel status (starting from a channel that is assigned showing a green LED), press and hold the Remote Push Button for (3) seconds and release. The status LED will change to Orange to indicate that the channel is still assigned, but channel monitoring is being ignored. Press and hold the Remote Push Button for (3) seconds and release again. The status LED will change to Red to indicate that the channel is desynchronized. When the desired status is attained, allow the desynchronization mode to time out to accept the change.

Desynchronization mode will time out after 20 seconds and the remote will return to normal operation.

BASE MODULE OPERATION

Base LED Descriptions

There are several different LED's shown on the Base Module to indicate different signals being sent to the Remote Module.

1. **No LED** – No LED will be witnessed while the Base Module is connected to the unit unless there is an active alert.
2. **Solid Green LED** – A Solid green LED indicates that the unit is in running mode.
3. **Solid Red LED** – A solid red LED indicates that the unit is in a Fault condition.
4. **Solid Orange LED** – A solid orange LED indicates that the process has been completed.
5. **Flashing Red LED** – A flashing red LED indicates that the Base Module is sending out a page to locate any remote synchronized to the Base Module.

REMOTE MODULE OPERATION

Remote Alerts

There are several alerts given by the Base Module and received by the Remote Module to indicate the status of operation.

1. **Process Running Alert** – indicated by a green LED that flashes every (6) seconds. There will be no audible beep or vibration. This alert lets the technician know that the service equipment is running normal and that the TechALERT[®] system is monitoring the process.
2. **Process Complete Alert** – indicated by a (6) second sequence of an audible beep, vibration, and flashing LED to alert the technician that the unit has finished the service selected. The LED will flash orange while giving an audible beep and vibration in the first second. The next second will show a green LED flash. The next 4 seconds will have no LED flashes, beeps, or vibrations.
3. **Fault Condition Alert/Service Interrupted** – indicated by a red LED, audible beep, and a vibration every 3 seconds. This alert is given when there is a fault condition and the unit cannot complete the service selected. Technician input is required.
4. **Out Of Range** – indicated by a (6) second sequence of an audible beep, vibration, and flashing red LED. The red LED will flash every second for 3 flashes, the beep and vibration will occur in the first second only. This alert occurs when a synchronized Remote Module is no longer able to receive a signal from the Base Module due to excessive distance between the base and the Remote Module.
5. **Low Battery Alert** – indicated only by an audible signal every second. Replace the batteries when the Low Battery Alert is activated. All existing synchronization will be maintained unless a Total Remote Reset (described later) is initiated during battery replacement.
6. **Remote Paging** – indicated by an audible beep, vibration, and flashing red LED on the assigned channel every (2) seconds.

NOTE: The vibration and audible beep will operate for a maximum of (1) minute to help preserve battery life. The LED will continue to flash the received alert until the status changes.

SILENCE -or- SNOOZE MODE: If required, the remote's audible and vibration feature can be momentarily disabled after a signal is recognized by holding the Remote Push Button until all four LED's light and release. The signal will still be received and indicated by the LED. Audible and vibration alerts will resume after (3) minutes if the reason for the alert is not addressed.

Typical Communication Range

The TechALERT® remote and base units have a typical open field communication range of 700 feet. There are several variables that will affect the total range. Such obstacles as metal buildings, concrete walls, and other permanent fixtures can reduce the total range of communication.

Remote Paging

This function is used to locate any Remote Modules that are synchronized to a Base Module.

Paging a Remote from a Base Module

Press the Base Module Push Button for (1) second and release. The Base Module will send out a "locate" PAGE signal to all remotes that are synchronized to it. The remote will continually flash the assigned LED for one second with a one second pause in between flashes. The remote will also vibrate and emit an audible signal continuously in one second intervals with one second pauses in between.

The paging function can be de-activated by pressing the Base Module Push Button for (1) second and then releasing it.

If the Base Module Push Button is not used to de-activate the paging function, it will time out after (3) minutes.

CAUTION: Because of the very sensitive measurement that occurs during some machine operations, DO NOT activate the Page function from a Base Module while that machine is in service to avoid disturbing the equipment!

Remote Deep Sleep Mode

This mode is useful when the Remote Module will be “out of range” for extended periods of time. In sleep mode, the remote will not respond to any signals from any synchronized Base Module.

To enter sleep mode, press and hold the Remote Push Button for (5) consecutive flashes of all (4) LED's and then release the push button. After (5) consecutive flashes of a (4) LED's, the remote is in deep sleep mode.

To wake up the Remote Module, press and hold the Remote Push Button for (3) seconds and then release. All (4) LED's will flash and there will be (1) audible beep and a (1) second buzz. All previous synchronizations will be maintained.

NOTE: To maximize remote battery life, place remote into sleep mode when unit monitoring is not required.

Automatic Deep Sleep Mode

This function is used when you want the remote to automatically switch itself to deep sleep to conserve battery life, or to ignore any signals received when away from the unit. The automatic deep sleep mode can either be disabled or enabled. The remote is sent from the factory as deep sleep mode disabled. If enabled after approximately 2 hours without receiving an alert, the remote will automatically enter deep sleep. To wake up the Remote Module, press and hold the Remote Push Button for (3) seconds and then release. All (4) LED's will flash and there will be (1) audible beep and a (1) second vibration. All previous synchronizations will be maintained.

To enter Deep Sleep Mode Programming, press and hold the Remote Push Button for (2) consecutive flashes of all 4 LED's and then release the push button. The lit LED will indicate the current programmed deep sleep setting; #1 LED indicates the Automatic Deep Sleep is disabled, #2 LED indicates the Automatic Deep Sleep is enabled. To change the status, press and release the Remote Push Button to toggle to the desired LED. Allow 20 seconds for the remote programming to time out to continue normal operations.

Total Remote Reset

This function is used when you want to reset the remote to remove any synchronization that is associated with it. To reset the remote, remove the screw on the rear of the Remote Module to access the battery compartment. Remove the batteries. While pressing the Remote Push Button, re-install the batteries.

RTI ONE-YEAR TechALERT® LIMITED WARRANTY

(Applies only to equipment owned and operated in North America)

During the One-Year Warranty period, RTI Technologies, Inc. (RTI) is solely responsible for costs associated with parts and labor for repairs needed due to defects in material and/or workmanship. RTI is not responsible for the costs associated with repairs needed due to improper use, damage due to physical or chemical abuse or a lack of normal maintenance. RTI's goal is to provide a timely turn-around of any TechALERT® requiring warranty repair.

The Customer is responsible to ASSIST AND PARTICIPATE with RTI Technical Support in the over-the-phone diagnosis process of:

- a) Determining that a legitimate failure has occurred and that the complaint is not just the result of inadequate training and/or improper use that could be easily remedied by over-the-phone instructions.
- b) Determining the nature of the failure and that it is reasonable for RTI Technical Support to judge over the phone that the failure is warrantable.

During the One Year Warranty period for failures that are deemed by RTI to be warrantable, RTI is solely responsible for providing Service and/or Replacement Product when appropriate within a reasonable period of time after a warrantable failure is reported.

RTI shall make the repairs at RTI's factory location and shall be responsible for the cost of transportation to and from the factory. It is the customer's responsibility to package the TechALERT® in its original packaging or in packaging sufficient to ensure safe transit for shipment to the factory.

It is the Customer's responsibility to maintain TechALERT® according to instructions in RTI's Operation Manual as well as to operate the equipment in a commercially reasonable manner as generally described in the RTI Operation Manual.

RTI provides free Technical Support over toll-free telephone lines in the USA to assist the customer in this regard for the life of TechALERT®.

The Customer should review the legal Warranty Disclaimer below for more details of coverage and limitations.

Warranty Disclaimer of RTI Technologies, Inc.

1. RTI'S WARRANTY

This is to certify that RTI Technologies, Inc. (RTI) warrants to the first retail purchaser only, the described new product manufactured by it to be free from defects in materials and workmanship, when properly maintained, **under normal use and service for a period of ONE YEAR**. All spare parts supplied by RTI will have a 90 day warranty. This warranty includes the reasonable cost of parts and materials as well as non-overtime labor. RTI shall be the sole judge of whether failure is warrantable.

2. PURCHASER'S REMEDY

Purchaser's sole and exclusive remedy under this warranty shall be limited to the repair or replacement, at RTI's option, of any defective part of the product. Purchaser shall call RTI Technical Support who will assist Purchaser in diagnosing the problem and, if deemed necessary, make arrangements to have the TechALERT® returned to RTI for repair.

3. PURCHASER'S DUTIES

- (a) Register TechALERT® with RTI by returning completed Warranty Registration within 90 days of delivery.
- (b) Transportation Expense: Transportation expenses to and from the RTI's facility for warranty repair are to be borne by RTI.
- (c) Notice of breach: Purchaser shall give written notice to RTI of any alleged refusal or failure of RTI to repair or replace as promised by this warranty no later than fifteen (15) days after the Purchaser learns of such alleged failure or refusal.

Continued Next Page

WARRANTY (Continued)

4. DISCLAIMER

THE EXPRESS WARRANTY HEREIN IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. NO IMPLIED WARRANTY OF MERCHANTABILITY IS MADE AND THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

5. EXCLUSIONS

The warranty and obligations stated here shall not apply to:

- (a) Any product not registered within 90 days of delivery.
- (b) Any product repaired or altered without prior approval of RTI so as to affect adversely its stability or reliability.
- (c) Any product subjected to misuse, abuse or accident as well as products used in a manner contrary to written instructions or normal operating procedures.
- (d) Any damage to product during original shipment or subsequent shipments to and from RTI for service.
- (e) Portions of products which are subject to warranties, if any, given by their manufacturers. RTI does not adopt these warranties.
- (f) Parts, accessories or other items manufactured by others which are used or installed on the product as a result of Purchaser's specifications.
- (g) Used items furnished by the Purchaser for installation on the product.
- (h) Items which are not defective, but must be replaced during the warranty period as a result of fair wear and tear or scheduled maintenance.

6. EXCLUSION OF LOST PROFITS AND OTHER CONSEQUENTIAL DAMAGES

RTI will have no liability for any lost profit, cargo loss, usage loss or other consequential damages alleged to have been caused by any defect in TechALERT[®] or any failure of RTI to meet any obligation under this agreement including the obligation to repair and replace set forth in Paragraph 2.

7. LIMITATIONS OF ACTIONS

No action for breach of this warranty shall commence more than one year after the accrual of the cause of action.

8. MERGER

This written warranty is the complete, final and exclusive agreement of the parties with respect to the quality or performance of the goods and any and all warranties and representations, except warranty extensions, if any, in writing as applicable.

9. NO ORAL MODIFICATIONS OR WAIVERS

No modification of this warranty or waiver of its terms shall be binding on either party unless approved in writing by an authorized official of the parties.

10. GOVERNING LAW

This warranty and the rights and duties of the parties under this warranty shall be governed by the law of Pennsylvania, the state of the RTI's principle place of business.

TechALERT®



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