

**TEMPO COMMUNICATIONS**  
**INSTRUCTION MANUAL**  
**MODEL 402K CABLE TV TONE TEST SET**



**WARNING**  
 Read and understand this material before operating or servicing this equipment. Failure to understand how to safely operate this tool can result in an accident causing serious injury or death.

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**SAFETY ALERT SYMBOL**  
 This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

**DANGER**  
 Immediate hazards which, if not avoided, WILL result in severe injury or death.

**WARNING**  
 Hazards which, if not avoided, COULD result in severe injury or death.

**CAUTION**  
 Hazards which, if not avoided, MAY result in injury.

**WARNING**  
**ELECTRIC SHOCK HAZARD**

- Do not expose this unit to rain or moisture. Contact with live circuits can result in severe injury or death.
  - Use this unit for the manufacturer's intended purpose only, as described in this manual. Any other use can impair the protection provided by the unit.
  - Use test leads or accessories that are appropriate for the application. See the category and voltage rating of the test lead or accessory.
  - Inspect the test leads or accessory before use. The item(s) must be clean and dry, and the insulation must be in good condition.
  - Before opening the case, remove the test leads from the circuit and shut off the unit.
- Failure to observe these precautions may result in severe injury or death.

**CAUTION**  
 Do not attempt to repair this unit. It contains no user-serviceable parts.  
 Do not expose the unit to extreme temperatures or high humidity. See Specifications.  
 Failure to observe these precautions can result in injury and can damage the instrument.

**Introduction**  
 This manual is intended to familiarize personnel with the safe operation and maintenance procedures for the Tempo Model 402K Cable TV Tone Test Set. Please read this entire manual before operating the tool and keep this manual available to all personnel. Replacement manuals are available upon request at no extra charge.

**Safety**  
 Safety is essential in the use and maintenance of Tempo tools and equipment. This instruction manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

**Description**  
 The Model 402K CATV Cable Tone Test Set consists of the 402T Toner and the 402R Receiver. There are female F-connectors on both units for testing and toning purposes. Specifically designed for the CATV, SMATV and MATV industries, the Model 402K aids in the identification of non-tagged or incorrectly tagged coaxial cables. The Model 402K is capable of sending tone through several passive devices including traps, splitters or directional couplers. The unit will provide a viable tone signal through attenuation of 45dB direct connection, 25dB inductively and 15dB magnetically. The addition of adapter test leads permits use on any size cable, with or without connectors.

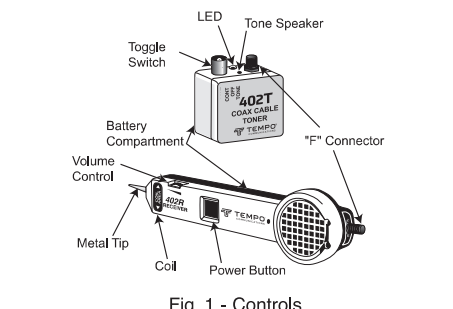


Fig. 1 - Controls

**Operation**  
**Battery Test**  
 The 402T and 402R units require one 9V battery each (not included) and both batteries should be tested prior to any tone or test functions. To test the 402T battery, attach the red/black test leads and short them together. Move the toggle switch to the CONT (continuity) position and note the presence and level of LED brightness and audible tone. A dim LED or weak tone indicates the need to replace battery.  
 To test the 402R, turn unit on and touch metal tip to the barrel of the 402T (with a known good battery) and turn the toggle switch on the 402T to TONE. An audible tone signal indicates acceptable battery level.

**WARNING**  
 Before opening the case, remove the test leads from the circuit and shut off the unit. Failure to observe these warnings can result in severe injury or death.

**Selecting Tone**  
 The Model 402T is capable of generating four distinct tones: fast alternating, slow alternating, fast pulsed and slow pulsed. In the TONE position, the 402T will produce a soft audible tone confirming operation and specific tone setting. To select a tone, remove screw and separate the 402T case and position the two internal slide switches until the desired tone is produced.

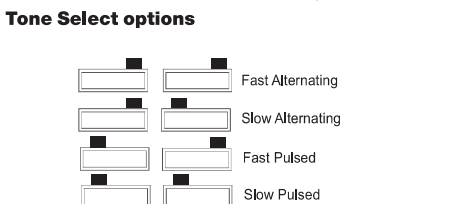


Fig. 2 - Tone Select Switches

**Toning Connected RG-6 & RG-59 Cables**

Connected cables (male fittings) can be attached directly to the 402T or via the wall plate with the push-on RG-59 coaxial adapter cable. With the toggle switch in the OFF position, note the condition of the LED display. The LED on the 402T will be lit if AC or positive DC voltage is detected up to 60 volts. Connect the 402T to the cable to be traced and move the toggle switch to the TONE position.

**Toning Cables without Connectors**  
 Use the red/black adapter clip leads on the 402T. Attach the red lead to the cable shield and the black lead to either the center conductor or independent earth ground.

**TEMPO COMMUNICATIONS**  
**INSTRUCTION MANUAL**  
**APPAREIL DE VÉRIFICATION DE TONALITÉ POUR TÉLÉVISION PAR CÂBLE MODÈLE 402K**



**AVERTISSEMENT**  
 Veuillez lire et bien comprendre ce manuel avant d'utiliser cet équipement ou d'en faire l'entretien. Le fait de ne pas savoir comment utiliser cet outil de façon sécuritaire peut entraîner des blessures graves ou la mort.

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**SYMBOLE D'ALERTE DE SÉCURITÉ**  
 Ce symbole attire l'attention sur les risques de danger et de mauvaise utilisation pouvant causer des blessures ou des dommages matériels. Le mot indicateur, défini ci-dessous, indique la sévérité du danger. Le message qui le suit explique comment prévenir ou éviter le danger en question.

**DANGER**  
 Dangers immédiats qui, à moins d'être évités, CAUSERONT CERTAINEMENT des blessures graves ou la mort.

**AVERTISSEMENT**  
 Dangers qui, à moins d'être évités, PEUVENT CAUSER des blessures graves ou la mort.

**MISE EN GARDE**  
 Dangers qui, à moins d'être évités, CAUSERONT PEUT-ÊTRE des blessures.

**AVERTISSEMENT**  
**RISQUE D'ÉLECTROCUTION**

- N'exposez pas cet appareil à la pluie ou à l'humidité. Tout contact avec des circuits sous tension peut causer des blessures graves ou la mort.
  - Employez cet outil uniquement selon l'usage prévu par le fabricant tel que décrit dans ce manuel. Toute autre utilisation peut affaiblir la protection assurée par l'appareil.
  - Utilisez des fils d'essai ou accessoires appropriés à l'application. Voir la catégorie et la tension nominale des fils d'essai ou accessoires.
  - Inspectez les fils d'essai ou accessoires avant utilisation. Les pièces doivent être propres et sèches et l'isolation en bon état.
  - Avant d'ouvrir le boîtier, retirez les fils d'essai du circuit et éteignez l'appareil.
- Le non-respect de ces précautions peut causer des blessures graves ou la mort.

**MISE EN GARDE**  
 N'essayez pas de réparer l'appareil. Il ne contient pas de pièces réparables par l'utilisateur.  
 N'exposez pas l'appareil à des températures extrêmes ou à un niveau d'humidité élevé. Voir les Caractéristiques techniques.  
 Le non-respect de ces précautions peut entraîner des blessures ou endommager l'instrument.

**Introduction**  
 Ce manuel est conçu pour que le personnel puisse se familiariser avec le fonctionnement et les procédures d'entretien sécuritaires de l'appareil de vérification de tonalité pour télévision par câble Tempo, modèle 402K. Veuillez lire ce manuel intégralement avant d'utiliser l'appareil. Gardez-le à la disposition du personnel. Des manuels de remplacement sont disponibles gratuitement sur simple demande.

**Sécurité**  
 La sécurité est essentielle à l'utilisation et l'entretien des outils et équipements Tempo. Ce manuel d'instructions et les étiquettes apposées sur l'outil fournissent des informations permettant d'éviter des dangers ou des manipulations dangereuses liées à l'utilisation de cet outil. Veuillez suivre toutes les consignes de sécurité indiquées.

**Description**  
 L'appareil de vérification de tonalité CATV modèle 402K comprend le générateur de tonalité 402T et le récepteur 402R. Les deux appareils sont dotés de connecteurs femelle de type F permettant d'effectuer des essais et de générer des tonalités. Spécialement conçu pour les industries de CATV, SMATV et MATV, le modèle 402K aide à identifier les câbles coaxiaux non marqués ou marqués incorrectement. Le modèle 402K est capable d'envoyer des tonalités à travers plusieurs dispositifs passifs y compris des pièges, des diviseurs ou des coupleurs directs. L'appareil émet un signal de tonalité viable au moyen d'une atténuation de connexion directe de 45 dB, 25 dB de façon inductive et 15 dB de façon magnétique. L'ajout de fils de test adaptateur permet une utilisation sur des câbles de toute dimension, avec ou sans connecteurs.

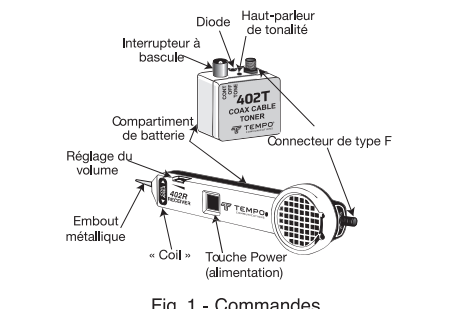


Fig. 1 - Commandes

**Fonctionnement**  
**Test de batterie**  
 Les appareils 402T et 402R nécessitent chacun une batterie de 9V (non incluse) qu'il faut tester avant d'employer les fonctions de tonalité ou de test. Pour tester la batterie du 402T, attachez les fils de test rouge/noir et court-circuitez-les ensemble. Mettez l'interrupteur à bascule sur CONT (continuité) et notez la présence et le niveau d'une tonalité audible et de la luminosité de la diode. Une diode ou une tonalité faible indique qu'il faut remplacer la batterie.  
 Pour tester le 402R, allumez l'appareil, touchez le corps du 402T avec l'embout métallique (avec une batterie en bon état) et mettez l'interrupteur à bascule du 402T sur TONE (tonalité). Un signal de tonalité audible indique que le niveau de la batterie est acceptable.

**AVERTISSEMENT**  
 Avant d'ouvrir le boîtier, débranchez l'appareil du circuit et éteignez-le. Le non-respect de ces avertissements peut causer des blessures graves ou la mort.

**Sélection de la tonalité**  
 Le modèle 402T peut générer quatre tonalités distinctes : alternative rapide, alternative lente, à impulsions rapides et à impulsions lentes. En position TONE, le 402T produit une tonalité audible douce confirmant le fonctionnement ainsi que le réglage d'une tonalité spécifique. Pour sélectionner une tonalité, retirez la vis et ouvrez le boîtier du 402T, puis positionnez les deux interrupteurs à glissière internes jusqu'à ce que la tonalité voulue soit reproduite.

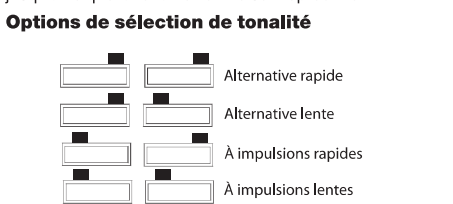


Fig. 2 - Commutateurs de sélection de tonalité

**Génération de tonalité sur des câbles RG-6 et RG-59**

Vous pouvez connecter des câbles (raccords mâles) directement sur le 402T ou via la plaque murale à l'aide du câble coaxial adaptateur RG-59. Mettez l'interrupteur à bascule sur OFF et notez l'état de la diode. La diode du 402T s'allume en cas de détection de tension c.a. ou c.c. positive à hauteur de 60 volts. Connectez le 402T au câble à tester et mettez l'interrupteur à bascule sur TONE.

**Génération de tonalité sur des câbles sans connecteurs**  
 Utilisez les câbles à pinces rouge/noir sur le 402T. Connectez le fil rouge au blindage et le fil noir au conducteur central ou à une prise de terre indépendante.

**TEMPO COMMUNICATIONS**  
**MANUAL DE INSTRUCCIONES**  
**EQUIPO DE PRUEBA DE TONOS PARA CABLEADO DE TELEVISIÓN POR CABLE MODELO 402K**



**ADVERTENCIA**  
 Lea y entienda este material antes de operar o dar servicio a este equipo. No entender cómo operar de manera segura esta herramienta puede resultar en accidentes, causando lesiones graves o muerte.

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**SÍMBOLO DE ALERTA DE SEGURIDAD**  
 Este símbolo se utiliza para llamar su atención sobre los peligros o las prácticas no seguras de trabajo que podrían resultar en lesiones o daños a la propiedad. La palabra de aviso, definida a continuación, indica la gravedad del peligro. El mensaje después de la palabra de aviso proporciona información para prevenir o evitar el peligro.

**PELIGRO**  
 Peligros inmediatos que, si no se evitan, RESULTARÁN en lesiones graves o muerte.

**ADVERTENCIA**  
 Peligros que, si no se evitan, PODRÍAN resultar en lesiones muy graves o muerte.

**PRECAUCIÓN**  
 Peligros que, si no se evitan, PUEDEN resultar en lesiones.

**ADVERTENCIA**  
**PELIGRO DE DESCARGA ELÉCTRICA**

- No exponga esta unidad a la lluvia o a la humedad. El contacto con circuitos vivos puede resultar en lesiones graves o muerte.
  - Utilice esta unidad sólo para los fines que ha destinado el fabricante, como se indica en este manual. Cualquier otro uso puede afectar la protección proporcionada por la unidad.
  - Utilice conductores de prueba o accesorios que sean apropiados para la aplicación. Consulte la categoría y el voltaje nominal del conductor o accesorio de prueba.
  - Inspeccione los conductores o los accesorios de prueba antes de usarlos. Los elementos deben estar limpios y secos, y el aislamiento debe estar en buen estado.
  - Antes de abrir la caja, retire los conductores de prueba del circuito y apague la unidad.
- No cumplir con estas precauciones puede resultar en lesiones graves o muerte.

**PRECAUCIÓN**  
 No intente reparar esta unidad. No contiene piezas a las que pueda prestar servicio el usuario.  
 No exponga esta unidad a temperaturas extremas o alta humedad. Consulte las especificaciones.  
 No cumplir con estas precauciones puede resultar en lesiones y puede dañar el instrumento.

**Introducción**  
 El propósito de este manual es familiarizar al personal con los procedimientos de operación y mantenimiento seguros para el equipo de prueba de tonos para cableado de televisión por cable marca Tempo modelo 402K. Por favor lea todo el manual antes de hacer funcionar la herramienta y manténgalo disponible para todo el personal. Hay manuales adicionales disponibles sin costo alguno, cuando los solicite.

**Seguridad**  
 La seguridad es esencial en el uso y el mantenimiento de las herramientas y el equipo Tempo. Este manual de instrucciones y cualquier marca que haya en la herramienta proporciona información para evitar peligros y prácticas peligrosas relacionados con el uso de esta herramienta. Observe toda la información de seguridad proporcionada.

**Descripción**  
 El equipo de prueba de tonos para cableado de televisión por cable marca Tempo modelo 402K consiste en el emisor de tono 402T y el receptor 402R. Ambas unidades tienen conectores hembra tipo F para fines de prueba e inserción de tonos. Específicamente diseñados para las industrias de CATV, SMATV y MATV, el modelo 402K facilita la identificación de cables coaxiales no rotulados o incorrectamente rotulados. El modelo 402K es capaz de enviar un tono a través de varios dispositivos pasivos tales como trampas, divisores (splitters) o acopladores direccionales. La unidad suministrará una señal de tono detectable a través de una atenuación de 45dB con conexión directa, 25dB inductivamente y 15dB magnéticamente. El equipo incluye unos terminales adaptadores de prueba que permiten el uso de cualquier tamaño de cable, ya sea con conectores o sin ellos.

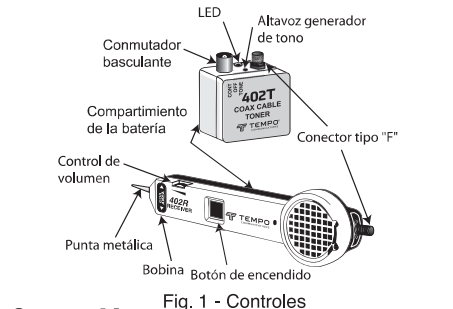


Fig. 1 - Controles

**Operación**  
**Prueba de batería**  
 Tanto la unidad 402T como la 402R requieren una batería de 9V (no incluidas), las cuales deberán ser probadas antes de realizar cualquier operación de prueba o inserción de tono. Para probar la batería del 402T, acople los terminales de prueba rojo/negro y cortocircútelos. Coloque el conmutador basculante en la posición de prueba de continuidad ("CONT") y verifique si se activan el LED y el tono audible, así como sus intensidades. Un LED tenue o un tono débil indicará la necesidad de reemplazar la batería.  
 Para probar el 402R, encienda la unidad y toque con la punta metálica el terminal de forma cilíndrica del 402T (asegúrese de usar una batería en buen estado) y coloque el conmutador basculante del 402T en "TONE". Si la unidad emite un tono audible significa que el nivel de la batería es aceptable.

**ADVERTENCIA**  
 Antes de abrir la caja, retire los conductores de prueba del circuito y apague la unidad. No cumplir con estas advertencias puede resultar en lesiones graves o muerte.

**Selección de tonos**  
 El modelo 402T es capaz de generar cuatro tonos fácilmente identificables: alternante rápido, alternante lento, pulsado rápido y pulsado lento. En la posición de tono ("TONE"), el 402T producirá un suave tono audible para confirmar la operación y el ajuste del tono específico. Para seleccionar un tono, saque el tornillo, separe la caja del 402T y ajuste los dos conmutadores deslizantes internos hasta que se produzca el tono deseado.

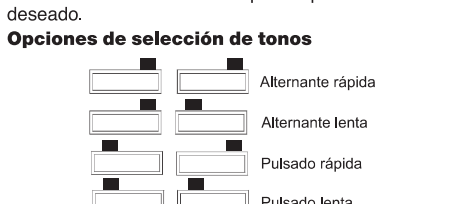


Fig. 2 - Conmutadores de selección de tonos

**Inserción de tono en cables RG-6 y RG-59 con conectores**

Los cables con conectores (conectores macho) pueden ser acoplados directamente al 402T o a través de la placa de pared con el cable del adaptador coaxial RG-59 enchufable a presión. Con el conmutador basculante en la posición de apagado ("OFF"), observe el estado del visualizador de LED. El LED del 402T se encenderá si se detecta un voltaje de c.a. o de c.c. positivo de hasta 60 volts. Conecte el 402T al cable que será rastreado y cambie el conmutador basculante a la posición de tono ("TONE").

**Inserción de tono en cables sin conectores**  
 Use los terminales adaptadores rojo y negro tipo cocodrilo en el 402T. Acople el terminal rojo a la pantalla del cable y el terminal negro al conductor central o a la tierra física independiente.

**TEMPO COMMUNICATIONS**  
**BEDIENUNGSANLEITUNG**  
**KABELFERNSEHEN-TONPRÜFGERÄT MODELL 402K**



**ACHTUNG**  
 Lesen Sie vor Betrieb oder Wartung dieses Geräts die Bedienungsanleitung sorgfältig durch. Mangelndes Verständnis seiner sicheren Handhabung kann zu schweren bzw. tödlichen Verletzungen führen.

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**SICHERHEITS-WARNSYMBOL**  
 Dieses Symbol macht Sie auf gefährliche oder riskante Praktiken aufmerksam, die zu Schäden oder Verletzungen führen können. Das Signalwort, wie nachfolgend definiert, gibt den Ernst der Gefahr an. Der dem Signalwort folgende Hinweis informiert darüber, wie die Gefahr vermieden wird.

**GEFAHR**  
 Akute Gefahr, die bei Nichtvermeiden zu schweren Verletzungen oder zum Tod führt.

**ACHTUNG**  
 Gefahr, die bei Nichtvermeiden zu schweren Verletzungen oder zum Tod führen kann.

**VORSICHT**  
 Gefahr, die bei Nichtvermeiden zu Verletzungen führen kann.

**ACHTUNG**  
**BERÜHRUNGS-GEFAHR**

- Dieses Gerät nicht Regen oder Feuchtigkeit aussetzen. Das Berühren von Stromkreisen kann zu schweren Verletzungen oder zum Tod führen.
  - Dieses Gerät nur zu seinem vom Hersteller bestimmten Zweck wie in dieser Anleitung beschrieben verwenden. Andere Verwendungen beeinträchtigen u.U. den vom Gerät gebotenen Schutz.
  - Für den jeweiligen Einsatz geeignete Messleitungen bzw. Zubehör verwenden. Kategorie und Nennspannung von Messleitung und Zubehör prüfen.
  - Messleitungen und Zubehör vor dem Einsatz überprüfen. Alle Teile müssen sauber und trocken sein, die Isolierung muss sich in gutem Zustand befinden.
  - Vor Öffnen des Gehäuses die Messleitungen von der Leitung entfernen und das Gerät abschalten.
- Nichtbeachten dieser Sicherheitsvorkehrungen kann zu schweren Verletzungen oder zum Tod führen.

**VORSICHT**  
 An diesem Gerät keine Reparaturversuche unternehmen. Es enthält keine vom Benutzer reparierbare Teile.  
 Das Gerät keinen extremen Temperaturen oder hoher Feuchtigkeit aussetzen. (Siehe Technische Daten)  
 Nichtbeachten dieser Sicherheitsvorkehrungen kann zu Verletzungen oder Schäden am Gerät führen.

**Einleitung**  
 Diese Anleitung dient dazu, das Bedienpersonal mit der sicheren Benutzung und Wartungsverfahren des Kabelfernseh-Tonprüfgeräts Tempo 402K vertraut zu machen. Bitte lesen Sie die Anleitung vor Benutzung des Geräts vollständig durch und bewahren Sie sie für alles Personal zugänglich auf. Ersatzanleitungen stellen wir Ihnen auf Wunsch kostenlos zur Verfügung.

**Sicherheit**  
 Sicherheit ist bei der Verwendung und Wartung von Tempo-Geräten und -Ausrüstung äußerst wichtig. Diese Bedienungsanleitung und Symbole auf dem Gerät enthalten Informationen zur Vermeidung von Gefahren und riskanten Praktiken im Zusammenhang mit diesem Gerät. Befolgen Sie alle hier aufgeführten Sicherheitsinformationen.

**Beschreibung**  
 Das Kabelfernseh-Tonprüfgerät Tempo 402K CATV besteht aus dem 402T Tongenerator und dem 402R Empfänger. Beide Geräte sind mit F-Steckbuchsen zum Prüfen und Tönen ausgestattet.  
 Das Modell 402K ist speziell für die CATV-, SMATV- und MATV-Branche konzipiert und hilft bei der Identifizierung von nichtmarkierten oder inkorrekt markierten Koaxialkabeln. Das Modell 402K kann einen Ton durch mehrere passive Geräte einschließlich Filter bzw. Traps, Splitter oder Richtkoppler senden. Bei direktem Anschluss erkennt das Gerät verlässliche Tonsignale durch eine Dämpfung von 45 dB, 25 dB bei der induktiven Spitze und 15 dB bei dem internen magnetischen Sensor. Die Erweiterung durch Adapter-Messleitungen erlaubt den Einsatz bei allen Kabelgrößen mit oder ohne Anschlusssteile.

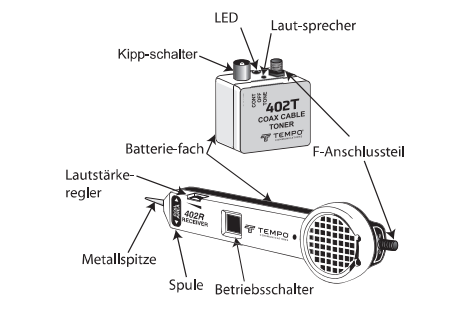


Abb. 1 - Regler

**Funktion**  
**Prüfen der Batterie**  
 Die Geräte 402T und 402R benötigen jeweils eine 9 V Batterie (liegt nicht bei), und beide Batterien sollten vor Einsatz der Geräte geprüft werden. Die Batterie des 402T wird geprüft, indem die roten und schwarzen Messleitungen angebracht und miteinander kurzgeschlossen werden. Den Kippschalter in die CONT-Position (Kontinuität) bringen und das Vorliegen und die Stärke der LED-Helligkeit und eines hörbaren Tons vermerken. Eine schwache LED oder ein schwacher Ton zeigt an, dass die Batterie ausgetauscht werden muss.  
 Den 402R zum Prüfen einschalten und die Trommel des 402T (die Batterie des 402T muss geladen sein) mit der Metallspitze berühren und den Kippschalter des 402T auf TONE schalten. Ein hörbares Tonsignal zeigt ein akzeptables Batterieniveau an.

**ACHTUNG**  
 Vor Öffnen des Gehäuses die Messleitungen von der Leitung entfernen und das Gerät abschalten. Nichtbeachten dieser Sicherheitsvorkehrungen kann zu schweren Verletzungen oder zum Tod führen.

**Wahl des Tons**  
 Der 402T kann vier unterschiedliche Töne erzeugen: schneller alternierender Ton, langsamer alternierender Ton, schneller pulsierender Ton und langsamer pulsierender Ton. In der TONE-Position erzeugt der 402T einen leisen, hörbaren Ton, der den Betrieb und die jeweilige Tonwahl bestätigt. Zur Wahl des Tons die Schraube entfernen, das Gehäuse des 402T trennen und die beiden internen Schieberegler auf den gewünschten Ton einstellen.

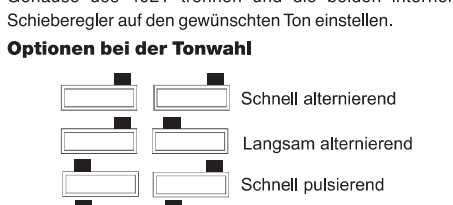


Abb. 2 - Tonwahlschalter

**Tonen von angeschlossenen RG-6 und RG-59 Kabeln**

Angeschlossene Kabel (mit Steckern) können direkt am 402T oder über die Wandplatte mit dem koaxialen Aufdrückadapterkabel RG-59 angebracht werden. Während sich der Kippschalter in der OFF-Position befindet, auf den



## Locating Open Cables

To locate open cables, place the 402R probe in the area of the multiple cables and run the metal tip along each individual cable until you hear the loudest tone. This will be the cable in question.

## Identifying Connected Drops at Passive Devices

**Individual Drops** -Use the area marked coil located at the end of the 402R probe approximately one inch away from the metal tip for identifying the cable that is connected to the 402T. Move the end of the probe (not the tip) around the cables that you are trying to identify. The loudest tone will signal identification of the cable in question.

Connected drops can only be identified in the inductive mode to the port of the first passive device.

NOTE: FOR TRACING CABLES THROUGH MULTIPLE PASSIVE DEVICES, PLEASE REFER TO THE DIRECT CONNECT METHOD. DO NOT TRY TO IDENTIFY CONNECTED DROPS INDUCTIVELY AS TONE MAY NOT BE PRESENT.

## Direct Connect Method

**Multiple Passive Devices** (Directional Couplers/Splitters)- Using the threaded "F" connector of the 402R probe located near the speaker, insert the fittings from the suspected cables. An audible tone will signify the cable in question.

**Drop at Lock Box Grounding Bar** - If individual drop is connected to the ground bar, place the 402R probe tip onto the end of the F-81 plastic covering without inserting the tip into the barrel. The tip will inductively pick up the signal. Keep moving probe into different F-81's until you hear the tone; indicating the cable in question.

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