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VARIAN

vacuum technologies

HeliTest with Analog Interface

Model 969-3502

MANUALE DI ISTRUZIONI

BEDIENUNGSHANDBUCH

NOTICE DE MODE D'EMPLOI

INSTRUCTION MANUAL

87-900-068-01 (B)
APRIL 2002

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HeliTest with Analog Interface



VARIAN

vacuum technologies

Dear Customer,

Thank you for purchasing a VARIAN vacuum product. At VARIAN Vacuum Technologies we make every effort to ensure that you will be satisfied with the product and/or service you have purchased.

As part of our Continuous Improvement effort, we ask that you report to us any problem you may have had with the purchase or operation of our product. On the back side you find a Corrective Action Request form that you may fill out in the first part and return to us.

This form is intended to supplement normal lines of communications and to resolve problems that existing systems are not addressing in an adequate or timely manner.

Upon receipt of your Corrective Action Request we will determine the Root Cause of the problem and take the necessary actions to eliminate it. You will be contacted by one of our employees who will review the problem with you and update you, with the second part of the same form, on our actions.

Your business is very important to us. Please, take the time and let us know how we can improve.

Sincerely.

Sergio PIRAS

Vice President and General Manager
VARIAN Vacuum Technologies

Note: Fax or mail the Customer Request for Action (see backside page) to VARIAN Vacuum Technologies (Torino) - Quality Assurance or to your nearest VARIAN representative for onward transmission to the same address.

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CUSTOMER REQUEST FOR CORRECTIVE / PREVENTIVE / IMPROVEMENT ACTION

TO : VARIAN VACUUM TECHNOLOGIES TORINO - QUALITY ASSURANCE

FAX N° : XXXX - 011 - 9979350

ADDRESS: VARIAN S.p.A. - Via F.lli Varian, 54 - 10040 Leinì (Torino) - Italy

E-MAIL : marco.marzio@varianinc.com

NAME	COMPANY	FUNCTION

ADDRESS : _____

TEL. N° : _____ FAX N° : _____

E-MAIL : _____

PROBLEM / SUGGESTION :

_____

_____

_____

_____

_____

_____

REFERENCE INFORMATION (model n°, serial n°, ordering information, time to failure after installation, etc.) :

_____

_____

_____

DATE _____

CORRECTIVE ACTION PLAN / ACTUATION (by VARIAN VTT) LOG N° _____

_____

_____

_____

_____

_____

_____

XXXX = Code for dialing Italy from your country (es. 01139 from USA; 00139 from Japan, etc.)

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INFORMAZIONI GENERALI

Il presente manuale si riferisce all'HeliTest con interfaccia analogica e deve essere utilizzato in abbinamento al manuale base HeliTest n. 87-900-045-01 del quale è parte integrante.

Questa apparecchiatura è destinata ad uso professionale. L'utilizzatore deve leggere attentamente il presente manuale di istruzioni ed ogni altra informazione addizionale fornita dalla Varian prima dell'utilizzo dell'apparecchiatura. La Varian si ritiene sollevata da eventuali responsabilità dovute all'inosservanza totale o parziale delle istruzioni, ad uso improprio da parte di personale non addestrato, ad interventi non autorizzati o ad uso contrario alle normative nazionali specifiche.

Nei paragrafi seguenti sono riportate tutte le informazioni necessarie a garantire la sicurezza dell'operatore durante L'utilizzo dell'apparecchiatura. Informazioni dettagliate sono fornite nell'appendice "Technical Information".

Questo manuale utilizza le seguenti convenzioni:

PERICOLO!

I messaggi di pericolo attirano l'attenzione dell'operatore su una procedura o una pratica specifica che, se non eseguita in modo corretto, potrebbe provocare gravi lesioni personali.

ATTENZIONE!

I messaggi di attenzione sono visualizzati prima di procedure che, se non osservate, potrebbero causare danni all'apparecchiatura.

NOTA

Le note contengono informazioni importanti estrapolate dal testo.

IMMAGAZZINAMENTO

Durante il trasporto e l'immagazzinamento degli strumenti, devono essere soddisfatte le seguenti condizioni ambientali:

- temperatura: da -20 °C a +70 °C
- umidità relativa: 0 - 95% (non condensante)

PREPARAZIONE PER L'INSTALLAZIONE

Durante l'operazione di disimballaggio, prestare particolare attenzione a non lasciar cedere gli strumenti e a non sottoporli ad urti.
Non disperdere l'imballo nell'ambiente. Il materiale è completamente riciclabile e risponde alla direttiva CEE 85/399 per la tutela dell'ambiente.

INSTALLAZIONE ED USO

PERICOLO!

Il Kit è fornito di caricabatterie e cavi di alimentazione a tre fili con una spina di tipo approvato a livello internazionale. Utilizzare sempre questi cavi di alimentazione ed inserire la spina in una presa con un adeguato collegamento di massa onde evitare scariche elettriche. All'interno degli strumenti si sviluppano alte tensioni che possono recare gravi danni o la morte.

Durante il funzionamento è necessario che siano rispettate le seguenti condizioni ambientali:

- temperatura: da -5 °C a +40 °C;
- umidità relativa: 0 - 95% (non condensante).

MANUTENZIONE

L'HeliTest con interfaccia analogica richiede solo la manutenzione dei filtri dei probe. Qualsiasi altro intervento deve essere eseguito da personale autorizzato.

PERICOLO!

Ogni intervento non autorizzato sul dispositivo potrebbe recare gravi danni a persone o cose.

In caso di guasto è possibile usufruire del servizio di riparazione Varian o del "Varian advanced exchange service", che permette di ottenere un dispositivo rigenerato in sostituzione di quello guasto.

Qualora un dispositivo, o parte di esso, dovesse essere rottamato, procedere alla sua eliminazione nel rispetto delle normative nazionali specifiche.

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ALLGEMEINE INFORMATIONEN

Die Handbuch behandelt den HeliTest mit Analogschnittstelle und sollte in Verbindung mit den Basishandbuch Nr. 87-900-045-01 benutzt werden, dessen integrierender Bestandteil es ist.

Die Geräte sind für Verwendung durch Experten vorgesehen. Der Anwender ist gehalten, diese Anweisungen und alle sonstigen von Varian gelieferten Informationen zu lesen, bevor er die Apparatur in Betrieb nimmt. Varian übernimmt keine Verantwortung für irgendwelche Folgen, die sich aus - auch nur teilweiser - Mißachtung dieser Anweisungen, falscher Benutzung durch Personen ohne entsprechende Ausbildung, unerlaubtes Manipulieren an der Apparatur oder irgendwelcher anderer Verletzungen der besonderen nationalen Vorschriften ergeben.

Die folgenden Abschnitte enthalten alle Informationen, die für die Sicherheit des Anwenders beim Betrieb von Bedeutung sind. Die darauf folgenden Kapitel liefern detaillierte Informationen.

In diesem Handbuch werden die folgenden Konventionen verwendet:

GEFAHR!

Die Gefahr-Meldungen haben den Zweck, die Aufmerksamkeit des Anwenders auf Verfahren oder Prozeduren zu lenken, die bei falscher Ausführung zu schweren Verletzungen führen können.

WICHTIG!

Diese Meldungen werden den Prozeduren vorangestellt, die bei falscher Ausführung die Maschine beschädigen können.

HINWEIS

Die Hinweise enthalten wichtige aus dem Text hervorgehobene Informationen.

EINLAGERUNG

Bei dem Transport und der Einlagerung der Geräte müssen folgende Umgebungsbedingungen eingehalten werden:

- Temperatur: -20 °C und + 70 °C
- Rel. Luftfeuchtigkeit: 0 - 95% (nicht kond.)

INSTALLATIONSVORBEREITUNGEN

Beim Auspacken sorgfältig darauf achten, dass die Geräte nicht herunterfallen oder gegen irgendetwas stoßen. Das Verpackungsmaterial entsprechend den Vorschriften entsorgen. Das Material kann zu 100% rezykliert werden und entspricht den EWG Normen der Richtlinie 85/399.

INSTALLATION UND BENUTZUNG

GEFAHR!

Das Kit hat ein Batterieladegerät und ein dreiadriges Stromkabel mit international zugelassenem Sicherheitsstecker. Kabel und Stecker müssen an eine Steckdose mit richtiger Erdung angeschlossen werden, um elektrische Schläge zu verhindern. Die im Gerät erzeugte Hochspannung kann schwere Verletzungen verursachen oder zum Tode führen.

Beim Betrieb müssen folgende Umgebungs-bedingungen eingehalten werden:

- Temperatur: -5 °C und + 40 °C
- rel. Luftfeuchtigkeit: 0 - 95% (nicht kond.)

WARTUNG

Die einzigen Wartungsarbeiten für den HeliTest mit Analogschnittstelle sind der Wechsel der Filter für den Standard- und den visuellen Filter. Alle anderen Eingriffe dürfen nur von autorisiertem Personal durchgeführt werden.

GEFAHR!

Jeder Eingriff durch nicht autorisierte Personen kann zu schweren Verletzungen und Sachschäden führen.

Bei Defekten kann man sich Varians Reparaturservice oder “Varian Advanced Exchange Service” bedienen, die das defekte Gerät gegen ein generalüberholtes austauschen.

Wenn ein Gerät oder ein Teil davon verschrottet werden soll, muß dies nach den nationalen Vorschriften geschehen.

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INFORMATIONS GENERALES

Ce manuel se réfère au dispositif HeliTest avec interface analogique et doit être utilisé avec le manuel de base HeliTest n. 87-900-045-01, dont il est une partie intégrante.

L'utilisation de cet équipement est réservée aux professionnels. L'utilisateur doit lire ces instructions pour l'utilisation et toute autre information supplémentaire fournie par la société Varian avant d'utiliser cet équipement. La société Varian décline toute responsabilité pour des dommages provoqués par le non-respect même partiel de ces instructions, par l'utilisation impropre de la part de personnel non adéquatement formé, par des modifications non autorisées ou par toute action contraire aux dispositions des normes nationales en la matière.

Les paragraphes suivants contiennent toutes les informations nécessaires pour la sécurité de l'opérateur pendant l'utilisation de l'équipement. Des informations détaillées sont contenues dans l'annexe "Informations techniques".

Ce manuel utilise les symboles suivants:

DANGER!

Les messages de danger servent à attirer l'attention de l'opérateur sur une procédure ou une opération spécifique qui, si elle n'est pas exécutée correctement, pourrait provoquer des graves lésions.

ATTENTION!

Les messages d'attention sont placés avant les procédures dont le non-respect pourrait entraîner des dommages à l'équipement.

NOTE

Il s'agit d'informations importantes tirées du texte.

STOCKAGE

L'équipement peut être transporté et stocké dans les conditions ambiantes suivantes:

- Température: -20 °C à +70 °C
- Humidité relative: 0 à 95% (sans condensat)

PREPARATION A L'INSTALLATION

Lors du déballage prenez soin de ne pas le faire tomber ou de lui faire subir des chocs.

Ne pas laisser l'emballage dans la nature. L'emballage est recyclable à 100% et est conforme aux normes CEE de la directive 85/399 pour la protection de l'environnement.

INSTALLATION ET UTILISATION

DANGER!

Le kit est livré avec un chargeur de batterie et un cordon d'alimentation doté d'une fiche à trois fils, homologuée au niveau international. Utilisez toujours ce cordon et branchez-le sur une prise d'alimentation dotée de mise à la terre appropriée pour éviter toute décharge électrique. La haute tension générée à l'intérieur de l'équipement peut entraîner des graves lésions, voire la mort.

L'équipement doit être utilisé dans les conditions ambiantes suivantes:

- Température: -5 °C à +40 °C;
- Humidité relative: 0 à 95% (sans condensats).

ENTRETIEN

En ce qui concerne l'entretien, le dispositif HeliTest avec interface analogique ne requiert que le remplacement des filtres standard et de ceux de la sonde visuelle. Toute autre intervention doit être effectuée par du personnel autorisé.

DANGER!

Toute intervention non autorisée effectuée sur le dispositif peut provoquer des lésions graves et des dommages aux biens.

En cas de défaillance du dispositif, vous pouvez vous adresser au service après-vente de la société Varian ou au "Varian Advanced Exchange Service" qui vous fournira un dispositif remis à neuf à la place de celui défaillant.

Si vous devez éliminer le dispositif, ou un de ses éléments, procéder à l'élimination conformément aux normes nationales en vigueur en la matière.

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GENERAL INFORMATION

This manual is relevant to the HeliTest with analog interface and is to be used in conjunction with the HeliTest base manual n. 87-900-045-01 of which is an integral part.

The equipment described in this manual is intended for professional use. The user must carefully read this instruction manual and any additional information provided by Varian before using the equipment. Varian declines all responsibility for damage caused by the total or partial misuse of the instructions provided herein, by the improper use of the equipment by untrained personnel, by unauthorized interventions or by negligence in complying with any specific national rule or regulation.

The following sections provide you with all the information needed to guarantee the operator's safety when using the equipment. Detailed information is provided in the appendix entitled "Technical Information".

The following conventions are used in this manual:

WARNING!

Danger messages call the operator's attention to a specific procedure or operation that could cause serious injury if not performed correctly.

CAUTION!

Warning messages are provided before procedures that could cause damage to the equipment if not complied with.

NOTE

Notes provide you with important information extracted from the text.

STORAGE

The equipment can be transported and stored under the following environmental conditions:

- Temperature: -20 °C to +70 °C
- Relative humidity: 0 to 95% (non-condensing)

PRIOR TO INSTALLATION

When unpacking the equipment, be careful to avoid dropping it or knocking it against anything.

Do not dispose the packaging material in the environment. The packaging material is totally recyclable and complies with EEC directives 85/399 for the safeguard of the environment.

INSTALLATION AND USAGE

WARNING!

The kit comes with a battery charger and with three-wire power cords fitted with internationally approved plugs. Always use these power cords and insert the related plugs into appropriately grounded power outlets so as to avoid electrostatic discharges. High voltages that could cause serious injury or even death are generated inside the equipment.

The equipment must be used under the following environmental conditions:

- Temperature: -5 °C to +40 °C
- Relative humidity: 0 to 95% (non-condensing).

MAINTENANCE

As far as maintenance is concerned, the HeliTest with analog interface requires only the replacement of probe filters. Any other intervention must be performed by authorized personnel.

WARNING!

Every unauthorized intervention on the device could cause serious injury to persons and damage to objects.

In the event of failure, it is possible to use the Varian repair service or the "Varian Advanced Exchange Service" through which you are assigned a refurbished device in replacement of the faulty one.

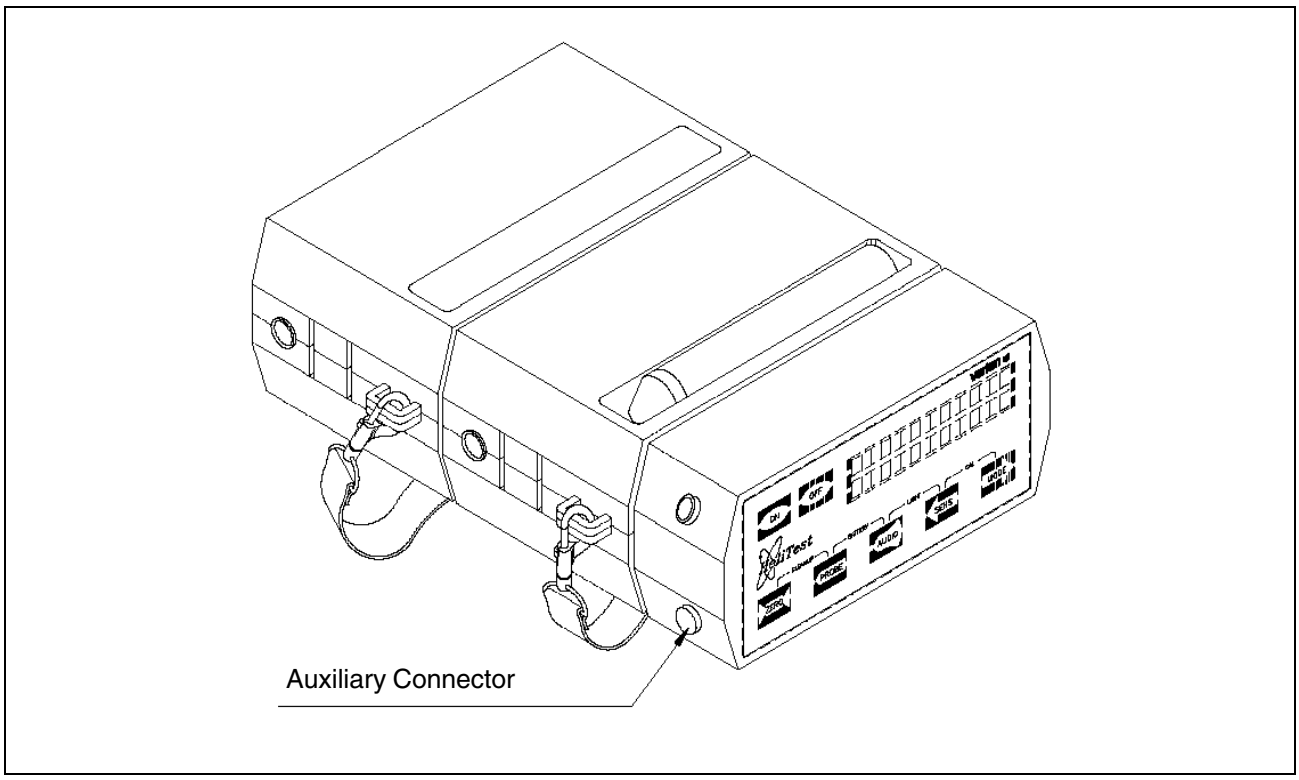
If a device, or a part of it, needs to be discarded, proceed to do so in compliance with the specific national standards.

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OVERVIEW

The HeliTest with analog interface is equipped with an auxiliary connector located on the side of the base module (see the following figure).

The auxiliary connector connections are shown in the figure "Auxiliary Connector Connections".



HeliTest with Battery and Analog Interface

ANALOG INTERFACE DESCRIPTION

The HeliTest with analog interface differs from the base unit for the supplementary two set point that can be adjusted in the configuration phase.

The Relay 1 controls the first set point (Set Point 1): when the measurement value exceeds the Set Point 1 threshold, the Relay 1 is activated.

Relay 2 can be controlled by the second set point (Set Point 2) when the “Relay 2 control” is set to “Set Point 2", or by the HeliTest status when ”Ready 2 control" is set to “Ready”.

In the first case (Relay 2 control = Set Point 2) the Relay 2 is activated when the merasurement value exceeds the Set Point 2 threshold.

In the second case (Relay 2 control = Ready) the Relay 2 is activated when the HeliTest is ready for the measurement.
As a default condition, “Relay 2 control” is set to “Ready”.

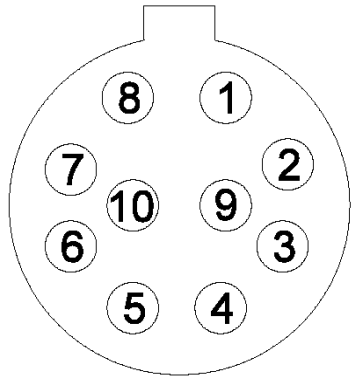
The two outputs of each relay are present on the auxiliary connector (see the figure "Auxiliary Connector Connections").

A digital input on pin 8 controls the zero function of the HeliTest from remote: when the input is open is activated the FIXED ZERO mode is activated (indication FZ on the display); when the input is closed the AUTOMATIC ZERO mode is activated (indication AZ on the display).

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In the following table are summarized the main technical characteristics of the HeliTest.

Relay contacts:	
Voltage	24 Vac/dc
Max current	1 A (resistive load) 0.3 A (inductive load)
Input FZ/AZ:	
pin 8: positive pin1: ground	pins 8-1 closed: AZ pins 8-1 open: FZ



1 = Ground
2 = N.O. Out Relay Set Point 1
3 = N.C. Out Relay Set Point 1
4 = Not used
5 = Analog Output
6 = N.C. Out Relay Set Point 2
7 = N.O. Out Relay Set Point 2
8 = Input FZ/AZ
9 = Com. Out Relay Set Point 1
10 = Com. Out Relay Set Point 2

Auxiliary Connector Connections

The analog output on pin 5 provides an analog voltage proportional to the Helium concentration. Its output is from -1.25 V to +5 V according to the following values:

- in HS mode: -1,25 V = -18 ppm
  +5V = 10^5 ppm
- in LS mode: -1.25 V = -1800 ppm
  +4 V = 10^6 ppm

with a resolution of 0.1 V.

For more details see the following figure.

NOTE

The analog output voltage is always related to the measured concentration in ppm. The information does not change if a different measurement unit is selected from the front panel.

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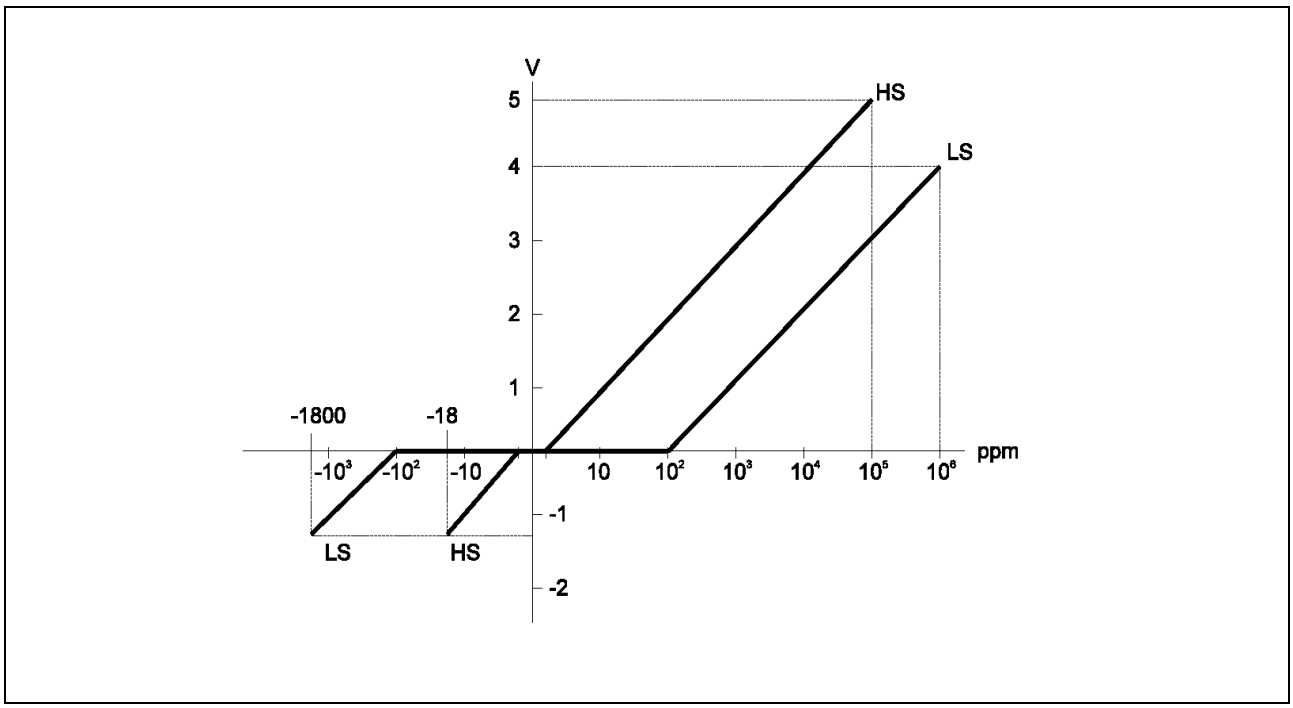
Connection Cable Assembly

To connect your system to the auxilary connector a connection cable must be assembled.

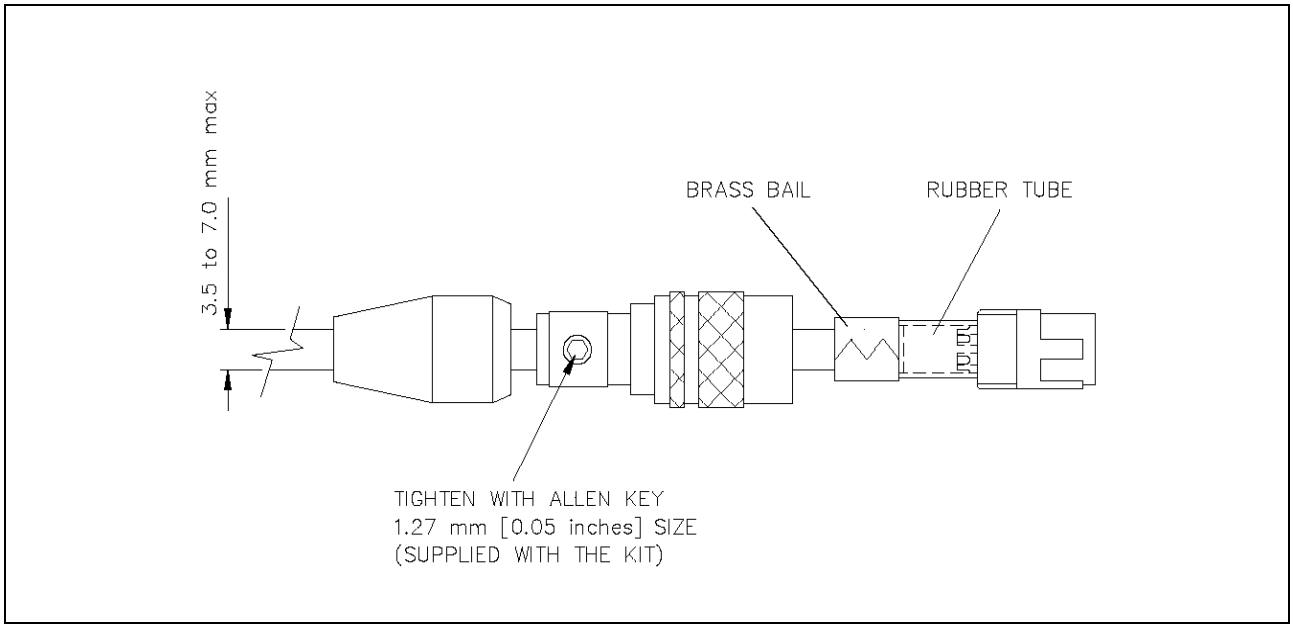
For this purpose a mating connector with the hardware necessary to connect the cable is provided.

For detail about the cable assembly and the connections see the following figures.

Extra mating connectors can be ordered to Varian with P/N SR51-10400201.



Analog Output Value Diagram



Connection Cable Assembly

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HELITEST CONFIGURATION

The HeliTest configuration is activated as detailed in the basic manual.
Some additional functions and parameters can be selected with the HeliTest with analog output model 969-3502.

Here the complete sequence is summarized and additional information is supplied:

1. Press ZERO and START buttons at the same time to start the configuration routine.

2. Language and measurement unit settings are possible as described in the basic instruction manual.

3. When the SET POINT indication appears, the selection of the display set point can be performed, as described in the basic instruction manual.

NOTE

This set point is activated when the threshold value is overtaken, and, if you are working in the Set Point Mode (is selected using the MODE button), the LEAK indication will appear.

NOTE

This set point is related only on the display and to the audible alarm signals, and is not connected with the relais outputs, which are related to SET POINT 1 and to SET POINT 2, as described as follows.

4. The next setting is for SET POINT 1: when the indication appears, please proceed with MODE or SENS buttons to set the desired value. When this value is overtaken, the corresponding changeover contact is activated.

5. The next setting is REMOTE or LOCAL: when the REMOTE mode is selected, the FX/AZ selection can be done through pins 1 and 8 of the auxiliary connector - if they are closed, the AUTOMATIC ZERO mode is activated, when they are open the FIXED ZERO mode is activated.

6. After the REMOTE/LOCAL mode of operation is selected, the function of the RELAY 2 should be chosen: of the READY selection is made, the changeover contact is activated when the HeliTest is in the READY condition; if the SET POINT 2 selection is made, then the realy will be activated when the second set point is overtaken.

7. When the RELAY 2 selection is made, if SET POINT 2 is chosen, then the threshold value should be set with the same procedure used for setting the set point 1, using the SENS or MODE pushbutton.

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Request for Return

ISO 9001 REGISTERED

1. A Return Authorization Number (RA#) **WILL NOT** be issued until this Request for Return is completely filled out, signed and returned to Varian Customer Service.
2. Return shipments shall be made in compliance with local and international **Shipping Regulations** (IATA, DOT, UN).
3. The customer is expected to take the following actions to ensure the **Safety** of workers at Varian: (a) Drain any oils or other liquids, (b) Purge or flush all gasses, (c) Wipe off any excess residues in or on the equipment, (d) Package the equipment to prevent shipping damage, (for Advance Exchanges please use packing material from replacement unit).
4. Make sure the shipping documents clearly show the RA# and then return the package to the Varian location nearest you.

North and South America	**Europe and Middle East**	**Asia and ROW**
Varian Vacuum Technologies 121 Hartwell Ave Lexington, MA 02421 Phone : +1 781 8617200 Fax: +1 781 8609252	Varian SpA Via Flli Varian 54 10040 Leini (TO) – ITALY Phone: +39 011 9979111 Fax: +39 011 9979330	Varian Vacuum Technologies Local Office

CUSTOMER INFORMATION

Company name: ……

Contact person: Name: …… Tel: ……

Fax: …… E-Mail: ……

Ship Method: …… Shipping Collect #: …… P.O.#: ……

Europe only: VAT reg. Number: …… *USA only*: ☐ Taxable ☐ Non-taxable

Customer Ship To: …… Customer Bill To: ……

……

……

……

……

PRODUCT IDENTIFICATION

Product Description	Varian P/N	Varian S/N	Purchase Reference

TYPE OF RETURN *(check appropriate box)*

☐ Paid Exchange ☐ Paid Repair ☐ Warranty Exchange ☐ Warranty Repair ☐ Loaner Return
☐ Credit ☐ Shipping Error ☐ Evaluation Return ☐ Calibration ☐ Other ……

HEALTH and SAFETY CERTIFICATION

Varian Vacuum Technologies **CAN NOT ACCEPT** any equipment which contains **BIOLOGICAL HAZARDS** or **RADIOACTIVITY**. Call Varian Customer Service to discuss alternatives if this requirement presents a problem.

The equipment listed above (check one):

☐ **HAS NOT** been exposed to any toxic or hazardous materials

OR

☐ **HAS** been exposed to any toxic or hazardous materials. In case of this selection, check boxes for any materials that equipment was exposed to, check all categories that apply:

☐ Toxic ☐ Corrosive ☐ Reactive ☐ Flammable ☐ Explosive ☐ Biological ☐ Radioactive

List all toxic or hazardous materials. Include product name, chemical name and chemical symbol or formula.

……

Print Name: …… Customer Authorized Signature: ……

Print Title: …… Date: ……/……/……

NOTE: If a product is received at Varian which is contaminated with a toxic or hazardous material that was not disclosed, **the customer will be held responsible** for all costs incurred to ensure the safe handling of the product, and **is liable** for any harm or injury to Varian employees as well as to any third party occurring as a result of exposure to toxic or hazardous materials present in the product.

Do not write below this line

Notification (RA)#: …… Customer ID#: …… Equipment #: ……

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Request for Return

ISO 9001 REGISTERED

FAILURE REPORT

TURBO PUMPS and TURBOCONTROLLERS

☐ Does not start	☐ Noise	POSITION	PARAMETERS		
☐ Does not spin freely	☐ Vibrations	☐ Vertical	Power:	Rotational Speed:	
☐ Does not reach full speed	☐ Leak	☐ Horizontal	Current:	Inlet Pressure:	
☐ Mechanical Contact	☐ Overtemperature	☐ Upside-down	Temp 1:	Foreline Pressure:	
☐ Cooling defective		☐ Other:	Temp 2:	Purge flow:	
		…….	OPERATION TIME:		

TURBOCONTROLLER ERROR MESSAGE:

ION PUMPS/CONTROLLERS

☐ Bad feedthrough	☐ Poor vacuum
☐ Vacuum leak	☐ High voltage problem
☐ Error code on display	☐ Other

Customer application:

VALVES/COMPONENTS

☐ Main seal leak	☐ Bellows leak
☐ Solenoid failure	☐ Damaged flange
☐ Damaged sealing area	☐ Other

Customer application:

LEAK DETECTORS

☐ Cannot calibrate	☐ No zero/high backround
☐ Vacuum system unstable	☐ Cannot reach test mode
☐ Failed to start	☐ Other

Customer application:

INSTRUMENTS

☐ Gauge tube not working	☐ Display problem
☐ Communication failure	☐ Degas not working
☐ Error code on display	☐ Other

Customer application:

PRIMARY PUMPS

☐ Pump doesn't start	☐ Noisy pump (describe)
☐ Doesn't reach vacuum	☐ Over temperature
☐ Pump seized	☐ Other

Customer application:

DIFFUSION PUMPS

☐ Heater failure	☐ Electrical problem
☐ Doesn't reach vacuum	☐ Cooling coil damage
☐ Vacuum leak	☐ Other

Customer application:

FAILURE DESCRIPTION

(Please describe in detail the nature of the malfunction to assist us in performing failure analysis):

NOTA: Su richiesta questo documento è disponibile anche in Tedesco, Italiano e Francese.
REMARQUE : Sur demande ce document est également disponible en allemand, italien et français.
HINWEIS: Auf Aufrage ist diese Unterlage auch auf Deutsch, Italienisch und Französisch erhältlich.

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