NOTICE: This document contains references to Varian. Please note that Varian, Inc. is now part of Agilent Technologies. For more information, go to **www.agilent.com/chem.**

Agilent Technologies

Analog TSP Control Unit

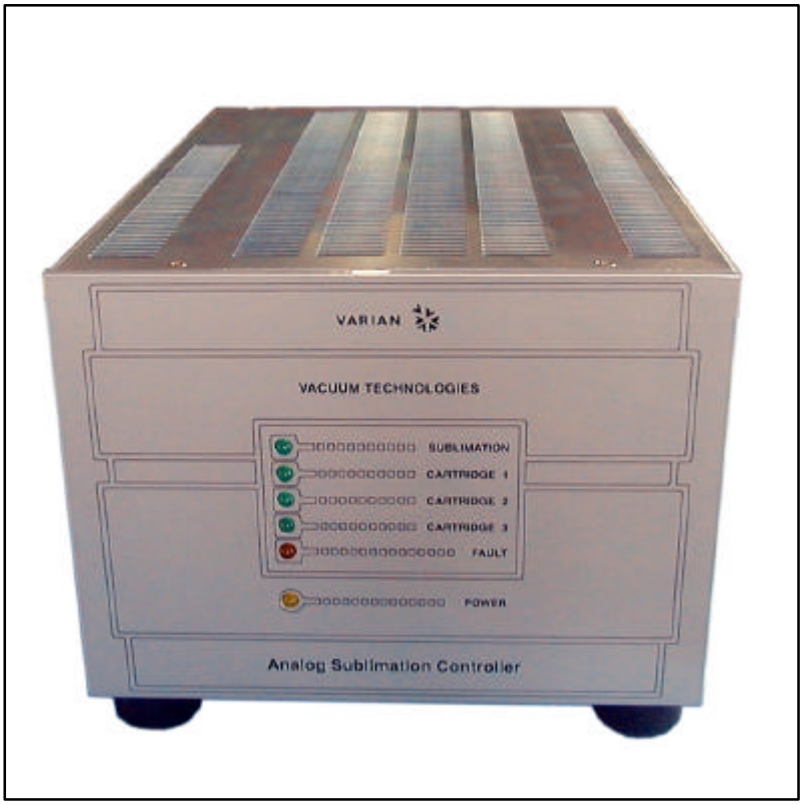
Model 829-0023

(F) *NOTICE DE MODE D'EMPLOI*

(GB) *INSTRUCTION MANUAL*

87-900-118-01 (C)
APRIL 2006

Analog TSP
Control Unit



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.

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.)

VARIAN

INDICATIONS GENERALES

Cet appareillage a été conçu en vue d'une utilisation professionnelle. Il est conseillé à l'utilisateur de lire attentivement cette notice d'instructions ainsi que toute autre indication supplémentaire fournie par Varian, avant l'utilisation de l'appareillage. Varian décline toute responsabilité en cas d'inobservation totale ou partielle des instructions données, d'utilisation incorrecte de la part d'un personnel non formé, d'opérations non autorisées ou d'un emploi contraire aux réglementations nationales spécifiques.

Les paragraphes suivants donnent toutes les indications nécessaires à garantir la sécurité de l'opérateur pendant l'utilisation de l'appareillage.

Cette notice utilise les signes conventionnels suivants:

DANGER!

Les messages de danger attirent l'attention de l'opérateur sur une procédure ou une manoeuvre spéciale qui, si elle n'est pas effectuée correctement, risque de provoquer de graves lésions.

ATTENTION!

Les messages d'attention apparaissent avant certaines procédures dont le non respect pourrait endommager sérieusement l'appareillage.

NOTES

Les notes contiennent des renseignements importants, extrapolés du texte.

STORAGE

When transporting and storing the Controller, the following environmental requirements should be satisfied:

- temperature: from -20 °C to + 70 °C
- relative humidity: 0 - 95% (without condensation)

PREPARATION FOR INSTALLATION

Le contrôleur est fourni dans un emballage spécial de protection. si l'on constate des marques de dommages pouvant s'être produites durant le transport , contacter le bureau de ventes. Durant l'opération d'ouverture de l'emballage, veiller à ce que le contrôleur ne subisse aucun choc ou ne tombe par terre. Ne pas jeter l'emballage dans la nature. Le matériel est entièrement recyclable et conforme à la réglementation EEC Directive 85/399.

INSTALLATION

DANGER!

Le contrôleur est pourvu d'un câble d'alimentation à 3 fils. Utiliser cette fiche dans une prise à terre afin d'éviter les décharges électriques.

NOTE

Le contrôleur doit être installé dans un module rack mais il doit être positionné de manière à ce que l'air puisse passe à travers les trous. Ne pas installer le contrôleur dans un milieu exposé aux agents atmosphériques (pluie, neige, gelée), aux poussières aux gaz agressifs ou dans des milieux à risque d'explosion ou d'incendie.

Durant l'opération d'installation, les conditions environnementales suivantes doivent être respectées:

- température: de 0 °C à +45 °C
- humidité relative: 0 - 95% (sans condensations)

Le paragraphe suivant décrit les procédures opérationnelles fondamentales.

Effectuer toutes les nombreuses connexions électriques et se référer aux instructions pour la pompe du manuel avant de commencer à utiliser le contrôleur.

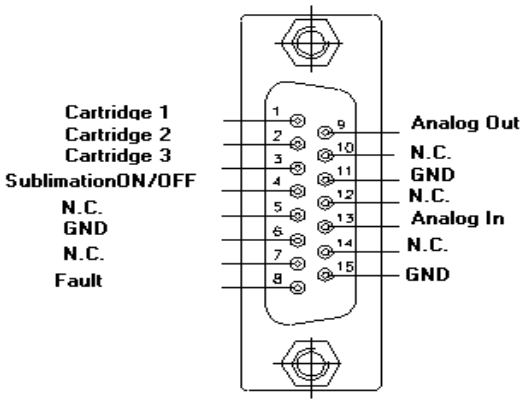
Panne courant

En cas de panne de courant (momentanée ou pour une longue durée) le contrôleur s'éteint. Lorsque le courant est rétabli, le contrôleur redémarre automatiquement.

SPECIFICATIONS TECHNIQUES

Fournitures principales:	
Voltage	230 Vac ±10% chaque phase
Fréquence	50 Hz
Puissance	600 VA max
Capacités de sortie:	
Voltage	12 Vac max
Courant	50 A max
Puissance	600 W
Température opérationnelle	de 0 à +45 °C
Température de stockage	de -20 à+70 °C
Fusibles principaux	T6,3 A
Conformité aux normes	
Sécurité	EN61010 – 1
EMC/EMI	EN55011 Classe A Groupe 1
	EN61000 – 4 – 4
	EN61000 – 4 – 2
	EN61000 – 3 – 2
	EN61000 – 4 – 11
Catégorie d'installation:	II
Degré de pollution:	2
Uniquement utilisation interne Altitude opérationnelle maximum:	 3000 m

Description connecteur commande à distance



À distance I/O
D-Shell Femelle 15P

1. Pin 13 – 6 0 à 10 Vdc signal de sortie analogique pour le Courant de Sublimation programmation(0 V correspondant à 0 A, 10 V correspondant à 50 A).

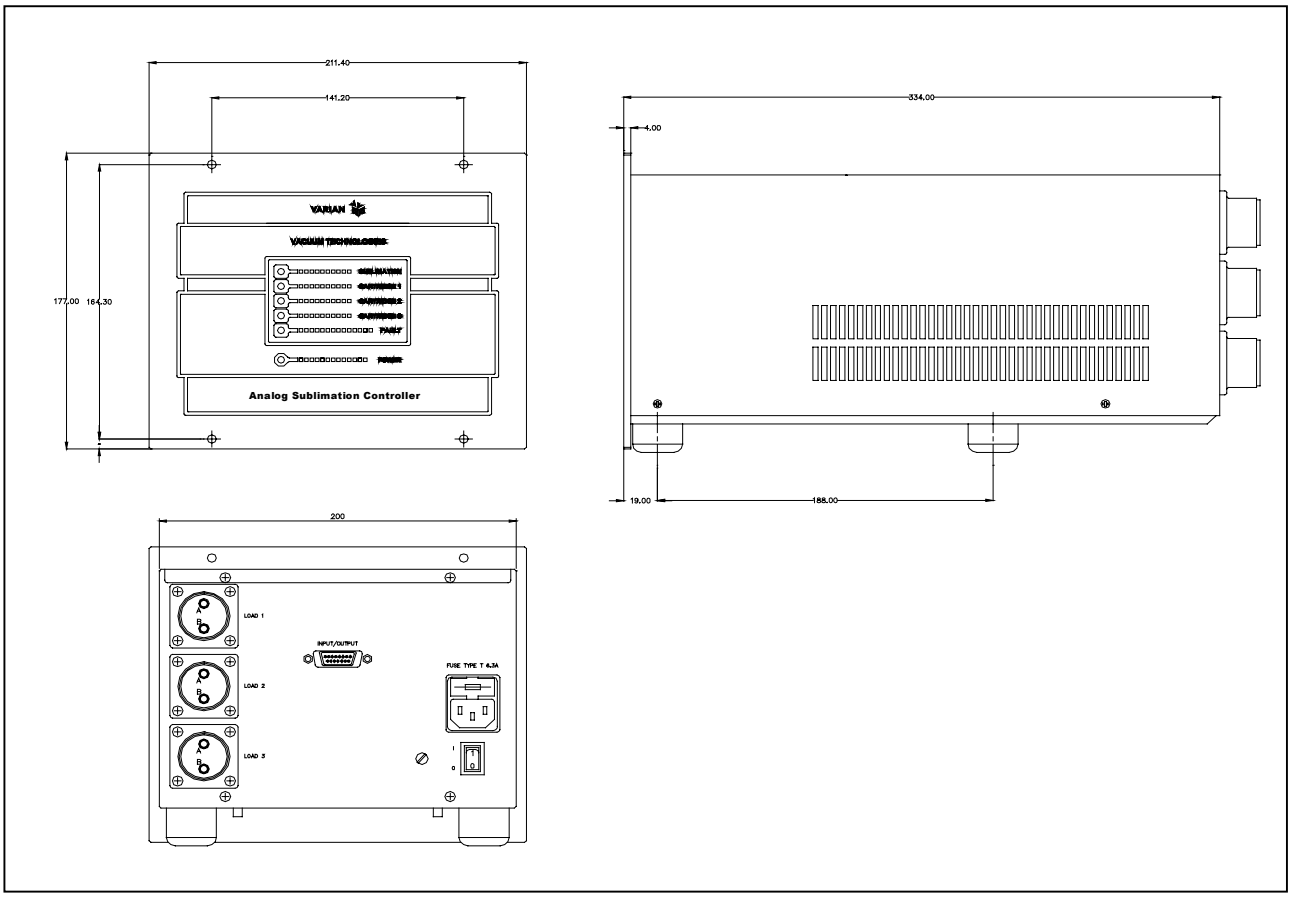
2. Pin 9 – 6
   0 à 10 Vdc signal de sortie analogique pour la lecture du courant de sublimation. (ce signal sera disponible uniquement lorsque la sublimation sera en cours) (0V = 0A, 10V = 50 A).

3. Pin 1 – 11 (Cartouche 1), Pin 2 – 11 (Cartouche 2), Pin 3 –11 (Cartouche 3)
   3 inputs numériques (24 Vdc par rapport au sol) pour la sélection de la cartouche TSP (commandes stables: 0 Cartouche non sélectionnée, 1 Catrouche sélectionnée).

4. Pin 4 – 11
   Input numérique pour la sublimation de la commande On/Off (24 Vdc par rapport au sol (commande stable: 0 Sublimation Off, 1 Sublimation On).

5. Pin 8 – 15
   Sortie numérique pour les indications d'anomalie. Le voltage pin 8 change de 0 V à 24 V par rapport au sol. (pin 15) lorsqu'une condition d'anomalie (fusible TSP brûlé, surchauffe sur le transformateur de puissance) est détectée.
   .

Voltage commande: 24 Vdc +/- 15%



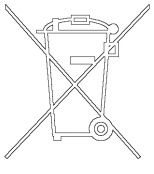
Contrôleur sublimation analogique

UTILISATION

1. Lorsque la commande de sublimation sur on est donnée à l'unité, le courant commence à se propager aux filaments sélectionnés.
   Le courant augmente graduellement de 0 A jusqu'à la valeur programmée à travers l'input analogique "0 à 10 Vdc avec une durée constante de 10 secondes.
   La Sublimation sur le voyant LED de l'unité du panneau antérieur s'allume après environ 2 secondes lorsque le courant est supérieur à 10 A.
2. Si par erreur deux filaments sont sélectionnés ensemble, l'unité acceptera la sélection uniquement d'un des deux filaments. (le premier sélectionné)
3. Le signal d'anomalie correspond à une des deux conditions suivantes:
   Surchauffe du transformateur de puissance (T > 100°C)
   Filament interrompu (voltage de sortie à la valeur maxi. et courant de sortie <10 A)
   En cas d'interruption du filament, afin d'allumer un nouveau filament, la procédure suivante doit être effectuée:
   Placer sur off la commande de sublimation
   Sélectionner le nouveau filament
   Placer sur on la commande de sublimation
   On ne peut pas allumer directement deux filaments sans avoir au préalable placé sur off la commande de sublimation.
4. Le courant maximum est toujours limité à 50 A. Même si un signal analogique d'entrée supérieur à10 Vdc est donné , le courant de sortie n'aura pas de valeurs supérieures à 50 A.

MISE AU REBUT

Signification du logo "WEEE" figurant sur les étiquettes.
Le symbole ci-dessous est appliqué conformément à la directive CE nommée "WEEE".
Ce symbole **(uniquement valide pour les pays de la Communauté européenne)** indique que le produit sur lequel il est appliqué NE doit PAS être mis au rebut avec les ordures ménagères ou les déchets industriels ordinaires, mais passer par un système de collecte sélective.
Après avoir vérifié les termes et conditions du contrat de vente, l'utilisateur final est donc prié de contacter le fournisseur du dispositif, maison mère ou revendeur, pour mettre en œuvre le processus de collecte et mise au rebut.



GENERAL INFORMATION

This equipment is destined for use by professionals. The user should read this instruction manual and any other additional information supplied by Varian before operating the equipment. Varian will not be held responsible for any events occurring due to non-compliance, even partial, with these instructions, improper use by untrained persons, non-authorised interference with the equipment or any action contrary to that provided for by specific national standards.

The following paragraphs contain all the information necessary to guarantee the safety of the operator when using the equipment. Detailed information is supplied in the section "Technical Information".

This manual uses the following standard protocol:

WARNING!

The warning messages are for attracting the attention of the operator to a particular procedure or practice which, if not followed correctly, could lead to serious injury.

CAUTION!

The caution messages are displayed before procedures which, if not followed, could cause damage to the equipment.

NOTE

The notes contain important information taken from the text.

STORAGE

When transporting and storing the Controller, the following environmental requirements should be satisfied:

- temperature: from -20 °C to + 70 °C
- relative humidity: 0 - 95% (without condensation)

PREPARATION FOR INSTALLATION

The controller is supplied in a special protective packing. If this shows signs of damage which may have occurred during transport, contact your local sales office. When unpacking, ensure that the module is not dropped or subjected to any form of impact. Do not dispose of the packing materials in an unauthorised manner. The material is 100% recyclable and complies with EEC Directive 85/399.

INSTALLATION

WARNING!

The controller is equipped with a 3-wire power cord. Use this power cord in conjunction with a properly grounded power socket to avoid electrical shock.

NOTE

The controller must be installed inside a rack module, but it must be positioned so that free air can flow through the holes. Do not install or use the controller in an environment exposed to atmospheric agents (rain, snow, ice), dust, aggressive gases, or in explosive environments or those with a high fire risk.

During operation, the following environmental conditions must be respected:

- temperature: from 0 °C to +45 °C
- relative humidity: 0 - 95% (without condensation)

The following paragraph describes the fundamental operating procedures.

Make all vacuum manifold and electrical connections and refer to the pump instruction manual prior to operating the controller.

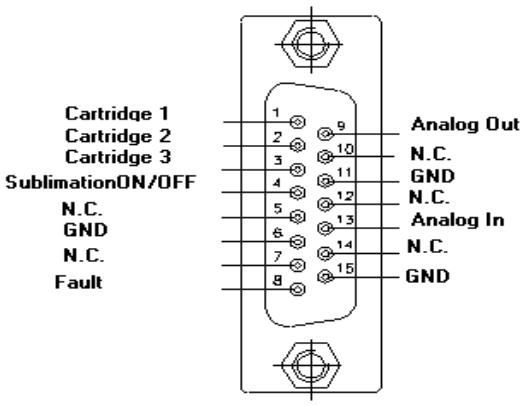
Power Failure

In the event of a power failure (momentary or long period) the controller is switched off. When power is restored, the controller will automatically restart.

TECHNICAL SPECIFICATIONS

Mains Supply:	
Voltage	230 Vac ±10% Single phase
Frequency	50 Hz
Power	600 VA max
Outputs:	
Voltage	12 Vac max
Current	50 A max
Power	600 W
Operating Temperature	From 0 to +45 °C
Storage Temperature	From -20 to+70 °C
Mains fuses	T6,3 A
Compliance with Norms	
Safety	EN61010 - 1
EMC/EMI	EN55011 Class A Group 1
	EN61000 – 4 - 4
	EN61000 – 4 - 2
	EN61000 – 3 - 2
	EN61000 – 4 - 11
Installation category:	II
Pollution degree:	2
Internal use only Maximum operating altitude:	3000 m

Remote Command Connector Description



Remote I/O
D-Shell Female 15P

1. Pin 13 – 6
   0 to 10 Vdc analog input signal for the Sublimation Current remote setting (0 V corresponding to 0 A, 10 V corresponding to 50 A).

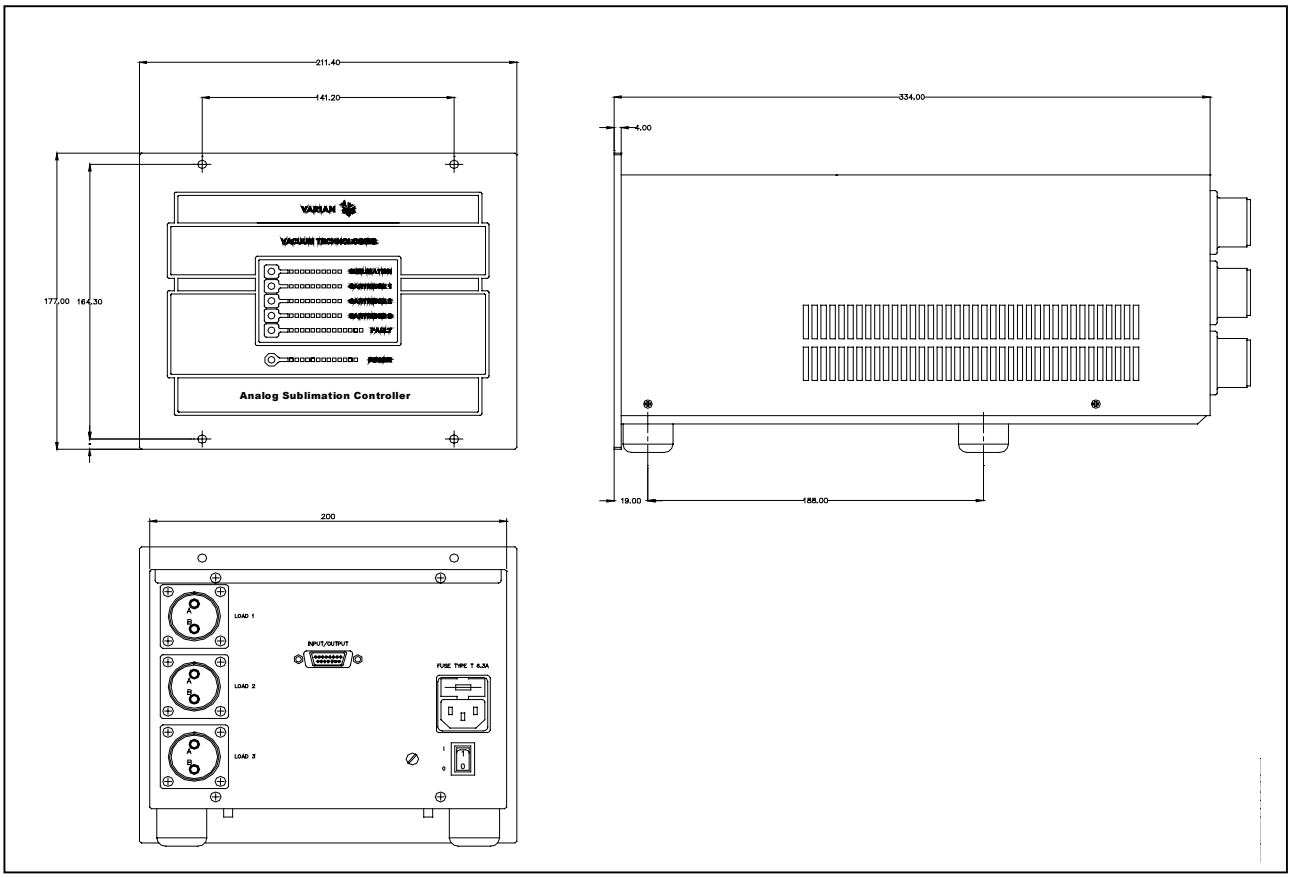
2. Pin 9 – 6
   0 to 10 Vdc analog output signal for the Sublimation Current reading. (This signal will be available only when the sublimation will be running) (0V = 0A, 10V = 50 A).

3. Pin 1 – 11 (Cartridge 1), Pin 2 – 11 (Cartridge 2), Pin 3 –11 (Cartridge 3)
   3 Digital inputs (24 Vdc with respect to ground) for the selection of the TSP cartridge (Stable commands: 0 Cartridge deselected, 1 Cartridge selected).

4. Pin 4 – 11
   Digital input for the Sublimation On/Off command (24 Vdc with respect to ground) (Stable command: 0 Sublimation Off, 1 Sublimation On).

5. Pin 8
   Digital output for the Fault Indication. When a FAULT condition (TSP filament burnt, Over-temperature on the Power Transformer) the voltage at pin 8 changes from 0 V to 24 V with respect to ground (pin 15).

Command Voltage: 24 Vdc +/- 15%



Analog Sublimation Controller

USE

1. When the command Sublimation on is given to the unit, the current starts to flow to the selected filament.
   The current increases gradually from 0 A up to the value set through the “0 to 10 Vdc analog input” with a time constant of 10 seconds.
   The Sublimation on LED on the unit front panel switches on after about 2 seconds when the current becomes higher than 10 A.

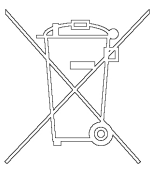
2. If, by error, two filaments are selected together, the unit will accept the selection of just one of the two filaments. (The first selected)

3. The Fault signal corresponds to one of the two following conditions:
   Overtemperature on the Power Transformer (T > 100°C)
   Filament interrupted (Output voltage at max. value and Output Current <10 A)
   In case of the filament interruption, in order to switch to a new filament, the following procedure has to be performed:
   Put to off the Sublimation command
   Select the new filament
   Put to on the Sublimation command
   It is not allowed to directly switch between two filaments without going through the switching off of the sublimation command.

4. The maximum current is always limited to 50 A. Even if an analog input signal higher than 10 Vdc is given, the output current will not go to values higher than 50 A.

DISPOSAL

Meaning of the "WEEE" logo found in labels
The following symbol is applied in accordance with the EC WEEE (Waste Electrical and Electronic Equipment) Directive.
This symbol (**valid only in countries of the European Community**) indicates that the product it applies to must NOT be disposed of together with ordinary domestic or industrial waste but must be sent to a differentiated waste collection system.
The end user is therefore invited to contact the supplier of the device, whether the Parent Company or a retailer, to initiate the collection and disposal process after checking the contractual terms and conditions of sale.



VARIAN

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 #: ……

VARIAN

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.

Sales and Service Offices

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From Benelux Fax: (31) 118 67 15 69

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Central coordination through:
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Fax: (52) 5 523 9472

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Taiwan, R.O.C.
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Fax: (886) 2 2698 9678
Toll Free: 0800 051342

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Fax: (781) 860 5437

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Vacuum Technologies
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Tel: (39) 011 997 9 111
Fax: (39) 011 997 9 350

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vtl.technical.support@varianinc.com

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Worldwide Web Site, Catalog and Order On-line:
www.varianinc.com

Representative in most countries

VARIAN

03/06