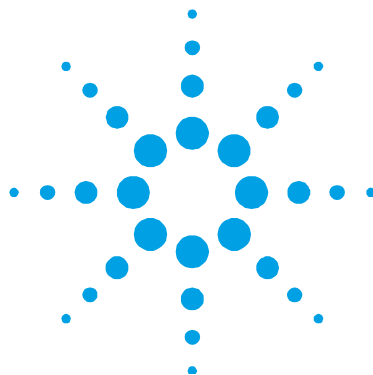




Analog TSP Control Unit

**Model
829-0023**

Notice de Mode D'Emploi User Manual

**87-900-118-01 (D)
05/2011**



Agilent Technologies

Notices

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Agilent Technologies Italia S.p.A.

Vacuum Products Division

Via F.lli Varian, 54

10040 Leini (TO)

ITALY

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Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

Analog TSP Control Unit



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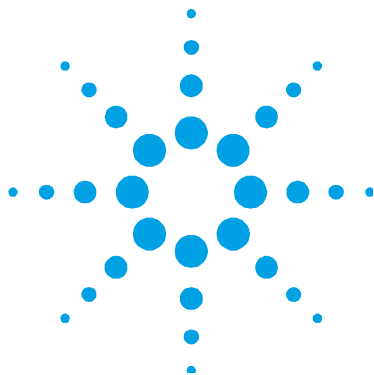
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Traduction de la mode d'emploi originale



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 Agilent, avant l'utilisation de l'appareillage. Agilent 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:

AVERTISSEMENT!



Les messages d'avertissement attirent l'attention de l'opérateur sur une procédure ou une manœuvre spéciale dont la mauvaise exécution risque de provoquer de graves lésions.

ATTENTION!

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

NOTE

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

AVERTISSEMENT!



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 passer 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

Tab. 1

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

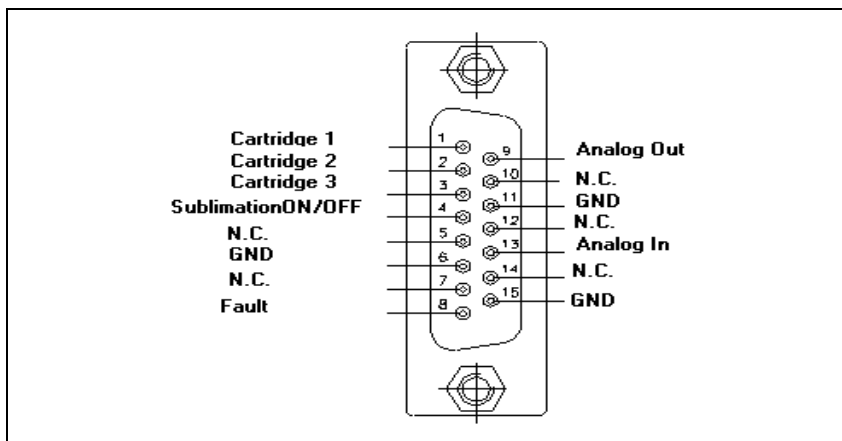


Figure 1 À distance I/O D-Shell Femelle 15P

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 Cartouche 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 %

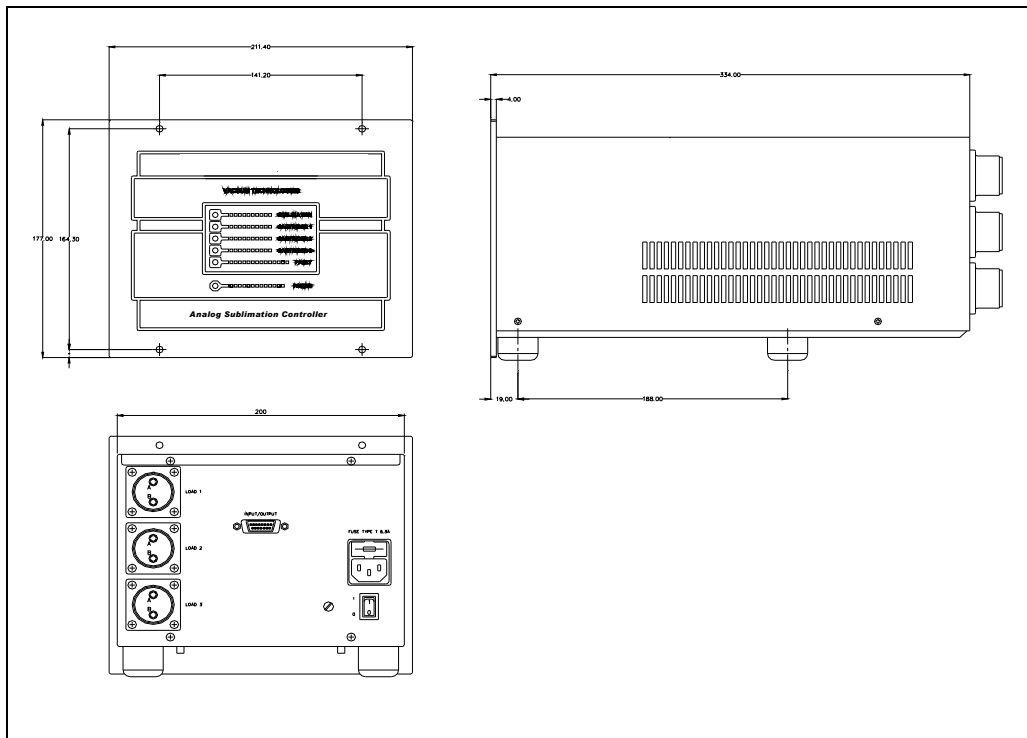


Figure 2 Contrôleur sublimation analogique

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 ($T > 100\text{ }^{\circ}\text{C}$)
 - Filament interrompu (voltage de sortie à la valeur maxi. et courant de sortie $< 10\text{ A}$)

En cas d'interruption du filament, afin d'allumer un nouveau filament, la procédure suivante doit être effectuée:

- 1** Placer sur off la commande de sublimation
- 2** Sélectionner le nouveau filament
- 3** 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 à 10 Vdc est donné, le courant de sortie n'aura pas de valeurs supérieures à 50 A.

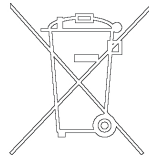
Mise au rebut

Signification du logo "WEEE" imprimé sur les étiquettes.

Le symbole ci-dessous est appliqué conformément à la directive CE nommée "WEEE".

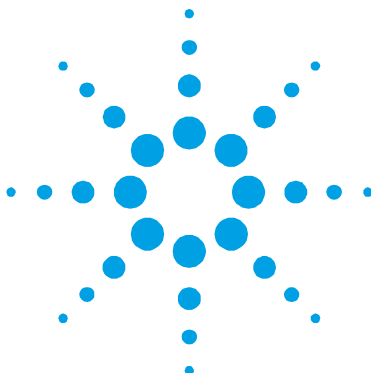
Ce symbole (**uniquement valide pour les pays de la Communauté européenne**) indique que le produit sur lequel il est appliqué NE doit PAS être mis au rebut avec les ordures ménagères ou les déchets industriels ordinaires, mais passer par un système de collecte sélective.

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.



1 Procédure pour l'installation

Mise au rebut



2

Installation Procedure

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Original Instructions



General Information

This equipment is destined for use by professionals. The user should read this instruction manual and any other additional information supplied by Agilent before operating the equipment. Agilent 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

Tab. 1

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

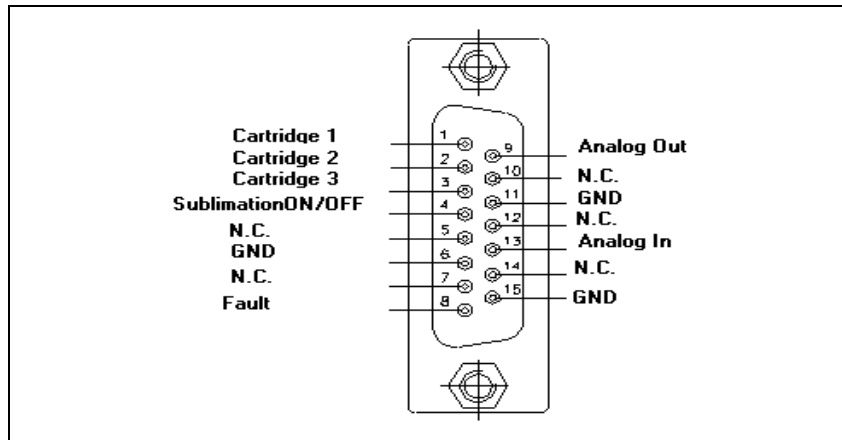


Figure 1 Remote I/O D-Shell Female 15P

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 %

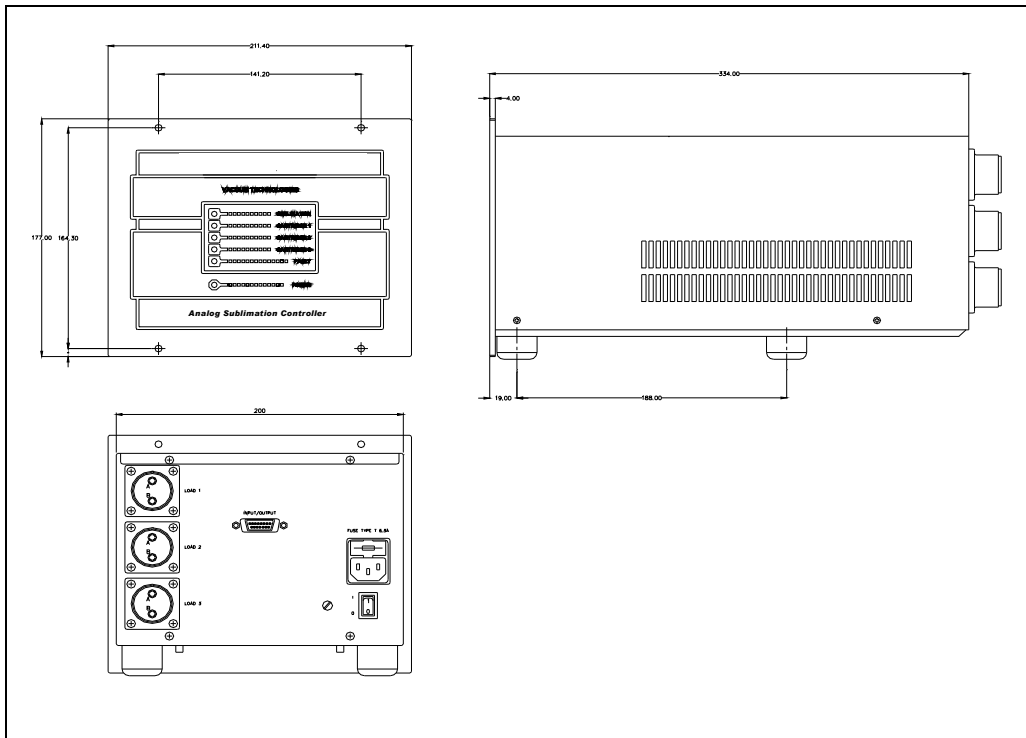


Figure 2 Analog Sublimation Controller

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 ($T > 100\text{ }^{\circ}\text{C}$)
 - Filament interrupted (Output voltage at max. value and Output Current $< 10\text{ A}$)

In case of the filament interruption, in order to switch to a new filament, the following procedure has to be performed:

- 1 Put to off the Sublimation command
- 2 Select the new filament
- 3 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.

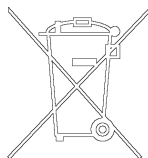
Disposal

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.



2 Installation Procedure

Disposal



Agilent Technologies

Vacuum Products Division

Dear Customer,

Thank you for purchasing an Agilent vacuum product. At Agilent Vacuum Products Division 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 products. 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,

Giampaolo LEVI

***Vice President and General Manager
Agilent Vacuum Products Division***

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

CUSTOMER REQUEST FOR CORRECTIVE / PREVENTIVE / IMPROVEMENT ACTION

TO: AGILENT VACUUM PRODUCTS DIVISION TORINO – QUALITY ASSURANCE

FAX N°: XXXX-011-9979350

ADDRESS: AGILENT TECHNOLOGIES ITALIA S.p.A. – Vacuum Products Division –

Via F.lli Varian, 54 – 10040 Leinì (TO) – Italy

E-MAIL: vpd-qualityassurance_pdl-ext@agilent.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 AGILENT VPD) _____ _____ _____ _____ _____ _____		LOG N° _____

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



Agilent Technologies



Vacuum Products Division Instructions for returning products

Dear Customer:

Please follow these instructions whenever one of our products needs to be returned.

- 1) Complete the attached Request for Return form and send it to Agilent Technologies (see below), taking particular care to identify all products that have pumped or been exposed to any toxic or hazardous materials.
- 2) After evaluating the information, Agilent Technologies will provide you with a Return Authorization (RA) number via email or fax, as requested.
Note: Depending on the type of return, a Purchase Order may be required at the time the Request for Return is submitted. We will quote any necessary services (evaluation, repair, special cleaning, eg).
- 3) **Important steps for the shipment of returning product:**
 - Remove all accessories from the core product (e.g. inlet screens, vent valves).
 - Prior to shipment, drain any oils or other liquids, purge or flush all gasses, and wipe off any excess residue.
 - If ordering an Advance Exchange product, please use the packaging from the Advance Exchange to return the defective product.
 - Seal the product in a plastic bag, and package product carefully to avoid damage in transit. You are responsible for loss or damage in transit.
 - Agilent Technologies is not responsible for returning customer provided packaging or containers.
 - **Clearly label package with RA number.** Using the shipping label provided will ensure the proper address and RA number are on the package. Packages shipped to Agilent without a RA clearly written on the outside cannot be accepted and will be returned.
- 4) Return only products for which the RA was issued.
- 5) **Product being returned under a RA must be received within 15 business days.**
- 6) **Ship to the location specified on the printable label, which will be sent, along with the RA number, as soon as we have received all of the required information.** Customer is responsible for freight charges on returning product.
- 7) Return shipments must comply with all applicable **Shipping Regulations** (IATA, DOT, etc.) and carrier requirements.

RETURN THE COMPLETED REQUEST FOR RETURN FORM TO YOUR NEAREST LOCATION:

EUROPE:

Fax: 00 39 011 9979 330

Fax Free: 00 800 345 345 00

Toll Free: 00 800 234 234 00

vpt-customer@agilent.com

NORTH AMERICA:

Fax: 1 781 860 9252

Toll Free: 800 882 7426, Option 3

vpl-ra@agilent.com

PACIFIC RIM:

please visit our website for individual
office information

<http://www.agilent.com>



**Vacuum Products Division
Request for Return Form
(Health and Safety Certification)**

Please read important policy information on Page 3 that applies to all returns.

1) CUSTOMER INFORMATION

Company Name:		Contact Name:
Tel:	Email:	Fax:
Customer Ship To:		Customer Bill To:
Europe only: VAT reg. Number:		USA/Canada only: ☐ Taxable ☐ Non-taxable

2) PRODUCT IDENTIFICATION

Product Description	Agilent P/N	Agilent S/N	Original Purchasing Reference

3) TYPE OF RETURN (Choose one from each row and supply Purchase Order if requesting a billable service)

- 3A. ☐ Non-Billable ☐ Billable ➡ New PO # (hard copy must be submitted with this form):
- 3B. ☐ Exchange ☐ Repair ☐ Upgrade ☐ Consignment/Demo ☐ Calibration ☐ Evaluation ☐ Return for Credit

4) HEALTH and SAFETY CERTIFICATION

AGILENT TECHNOLOGIES CANNOT ACCEPT ANY PRODUCTS CONTAMINATED WITH BIOLOGICAL OR EXPLOSIVE HAZARDS, RADIOACTIVE MATERIAL, OR MERCURY AT ITS FACILITY.

Call Agilent Technologies to discuss alternatives if this requirement presents a problem.

The equipment listed above (check one):

- ☐ **HAS NOT** pumped or been exposed to any toxic or hazardous materials. OR
- ☐ **HAS** pumped or been exposed to the following toxic or hazardous materials. If this box is checked, the following information must also be filled out. Check boxes for all materials to which product(s) pumped or was exposed:

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

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

NOTE: If a product is received at Agilent 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 Agilent employees as well as to any third party occurring as a result of exposure to toxic or hazardous materials present in the product.

Print Name: _____ **Authorized Signature:** _____ **Date:** _____

5) FAILURE INFORMATION:

Failure Mode (REQUIRED FIELD. See next page for suggestions of failure terms):
Detailed Description of Malfunction: (Please provide the error message)
Application (system and model):

I understand and agree to the terms of Section 6, Page 3/3.

Print Name: _____ **Authorized Signature:** _____ **Date:** _____



Vacuum Products Division Request for Return Form (Health and Safety Certification)

Please use these Failure Mode to describe the concern about the product on Page 2.

TURBO PUMPS and TURBO CONTROLLERS

APPARENT DEFECT/MALFUNCTION	POSITION	PARAMETERS
- Does not start - Does not spin freely - Does not reach full speed - Mechanical Contact - Cooling defective	- Noise - Vibrations - Leak - Overtemperature - Clogging	- Vertical - Horizontal - Upside-down - Other:
		Power: Rotational Speed: Current: Inlet Pressure: Temp 1: Foreline Pressure: Temp 2: Purge flow: OPERATING TIME:

ION PUMPS/CONTROLLERS

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

VALVES/COMPONENTS

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

LEAK DETECTORS

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

INSTRUMENTS

- Gauge tube not working - Communication failure - Error code on display	- Display problem - Degass not working - Other
--	--

SCROLL AND ROTARY VANE PUMPS

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

DIFFUSION PUMPS

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

Section 6) ADDITIONAL TERMS

Please read the terms and conditions below as they apply to all returns and are in addition to the Agilent Technologies Vacuum Product Division – Products and Services Terms of Sale.

- Customer is responsible for the freight charges for the returning product. Return shipments must comply with all applicable **Shipping Regulations** (IATA, DOT, etc.) and carrier requirements.
- Customers receiving an Advance Exchange product agree to return the defective, rebuildable part to Agilent Technologies **within 15 business days**. Failure to do so, or returning a non-rebuildable part (crashed), will result in an invoice for the non-returned/non-rebuildable part.
- Returns for credit toward the purchase of new or refurbished Products are subject to prior Agilent approval and may incur a restocking fee. Please reference the original purchase order number.
- Units returned for evaluation will be evaluated, and a quote for repair will be issued. If you choose to have the unit repaired, the cost of the evaluation will be deducted from the final repair pricing. A Purchase Order for the final repair price should be issued within 3 weeks of quotation date. Units without a Purchase Order for repair will be returned to the customer, and the evaluation fee will be invoiced.
- A Special Cleaning fee will apply to all exposed products per Section 4 of this document.
- If requesting a calibration service, units must be functionally capable of being calibrated.

Sales and Service Offices

United States

Agilent Technologies
Vacuum Products Division
121 Hartwell Avenue
Lexington, MA 02421 - USA
Tel.: +1 781 861 7200
Fax: +1 781 860 5437
Toll-Free: +1 800 882 7426

Benelux

Agilent Technologies Netherlands B.V.
Vacuum Products Division
Herculesweg 8
4338 PL Middelburg
The Netherlands
Tel.: +31 118 671570
Fax: +31 118 671569
Toll-Free: 00 800 234 234 00

Canada

Central coordination through: Agilent Technologies
Vacuum Products Division
121 Hartwell Avenue
Lexington, MA 02421 - USA
Tel.: +1 781 861 7200
Fax: +1 781 860 5437
Toll-Free: +1 800 882 7426

China

Agilent Technologies (China) Co. Ltd
Vacuum Products Division
No.3, Wang Jing Bei Lu,
Chao Yang District,
Beijing, 100102
China
Tel.: +86 (10) 6439 7718
Toll-Free: 800 820 6556

France

Agilent Technologies France
Vacuum Products Division
7 Avenue des Tropiques
Z.A. de Courtaboeuf - B.P. 12
91941 Les Ulis cedex - France
Tel.: +33 (0) 1 69 86 38 84
Fax: +33 (0) 1 69 86 29 88
Toll free: 00 800 234 234 00

Germany and Austria

Agilent Technologies
Vacuum Products Division Alsfelder Strasse 6 Postfach 11
14 35
64289 Darmstadt – Germany
Tel.: +49 (0) 6151 703 353
Fax: +49 (0) 6151 703 302
Toll free: 00 800 234 234 00

India

Agilent Technologies India Pvt. Ltd.
Vacuum Product Division
G01. Prime corporate Park,
230/231, Sahar Road, Opp. Blue Dart Centre,
Andheri (East), Mumbai – 400 099.India
Tel: +91 22 30648287/8200
Fax: +91 22 30648250
Toll Free: 1800 113037

Italy

Agilent Technologies Italia S.p.A.
Vacuum Products Division
Via F.lli Varian, 54
10040 Leini, (Torino) - Italy
Tel.: +39 011 997 9111 Fax: +39 011 997 9350
Toll-Free: 00 800 234 234 00

Japan

Agilent Technologies Japan, Ltd.
Vacuum Products Division
8th Floor Sumitomo Shibaura Building
4-16-36 Shibaura Minato-ku Tokyo 108-0023 - Japan
Tel.: +81 3 5232 1253
Fax: +81 3 5232 1710
Toll-Free: 0120 655 040

Korea

Agilent Technologies Korea, Ltd.
Vacuum Products Division
Shinsa 2nd Bldg. 2F 966-5 Daechi-dong
Kangnam-gu, Seoul
Korea 135-280
Tel.: +82 2 3452 2452
Fax: +82 2 3452 2451
Toll-Free: 080 222 2452

Mexico

Agilent Technologies
Vacuum Products Division
Concepcion Beistegui No 109 Col Del Valle
C.P. 03100 – Mexico, D.F.
Tel.: +52 5 523 9465
Fax: +52 5 523 9472

Singapore

Agilent Technologies Singapore Pte. Ltd.
Vacuum Products Division
Agilent Technologies Building,
1 Yishun Avenue 7,
Singapore 768923
Tel : (65) 6215 8045
Fax : (65) 6754 0574

Southeast Asia

Agilent Technologies Sales Sdn Bhd
Vacuum Products Division
Unit 201, Level 2 uptown 2,
2 Jalan SS21/37, Damansara Uptown
47400 Petaling Jaya,
Selangor, Malaysia
Tel : +603 7712 6106
Fax: +603 6733 8121

Taiwan

Agilent Technologies Taiwan Limited
Vacuum Products Division (3F)
20 Kao-Shuang Rd.,
Pin-Chen City, 324
Taoyuan Hsien , Taiwan, R.O.C.
Tel. +886 34959281
Toll Free: 0800 051 342

UK and Ireland

Agilent Technologies UK, Ltd.
Vacuum Products Division
6 Mead Road Oxford Industrial Park
Yarnton, Oxford OX5 1QU – UK
Tel.: +44 (0) 1865 291570
Fax: +44 (0) 1865 291571
Toll free: 00 800 234 234 00

Other Countries

Agilent Technologies Italia S.p.A.
Vacuum Products Division
Via F.lli Varian, 54 10040 Leini, (Torino) -
Italy
Tel.: +39 011 997 9111
Fax: +39 011 997 9350
Toll-Free: 00 800 234 234 00

Customer Support & Service

NORTH AMERICA:

Toll Free: 800 882 7426, Option 3
vpl-ra@agilent.com

EUROPE:

Toll Free: 00 800 234 234 00
vpt-customer@agilent.com

PACIFIC RIM:

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