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Agilent Technologies

MicroVac Controller

**Model 929-0200
Model 929-0201**

*(I) MANUALE DI ISTRUZIONI
(D) BEDIENUNGSHANDBUCH
(F) NOTICE DE MODE D'EMPLOI
(GB) INSTRUCTION MANUAL*

MicroVac Controller



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.)

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INFORMAZIONI GENERALI

Questa apparecchiatura è destinata ad uso professionale. L'utilizzatore deve leggere attentamente il presente manuale di istruzioni ed ogni altra informazione aggiuntiva 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. Il MicroVac è un alimentatore ad alta tensione e bassa potenza, utilizzato per alimentare le pompe ioniche, è dotato di un microprocessore utilizzato per pilotare il pannello frontale.

Oltre al connettore per alimentare la pompa, è presente anche un spinotto che svolge la funzione di Interlock, se questo non è inserito sul connettore di uscita non è presente alcuna tensione.

Nei paragrafi seguenti sono riportate tutte le informazioni necessarie a garantire la sicurezza dell'operatore durante l'utilizzo dell'apparecchiatura. Informazioni dettagliate sono fornite nella sezione "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 dei MicroVac devono essere soddisfatte le seguenti condizioni ambientali:

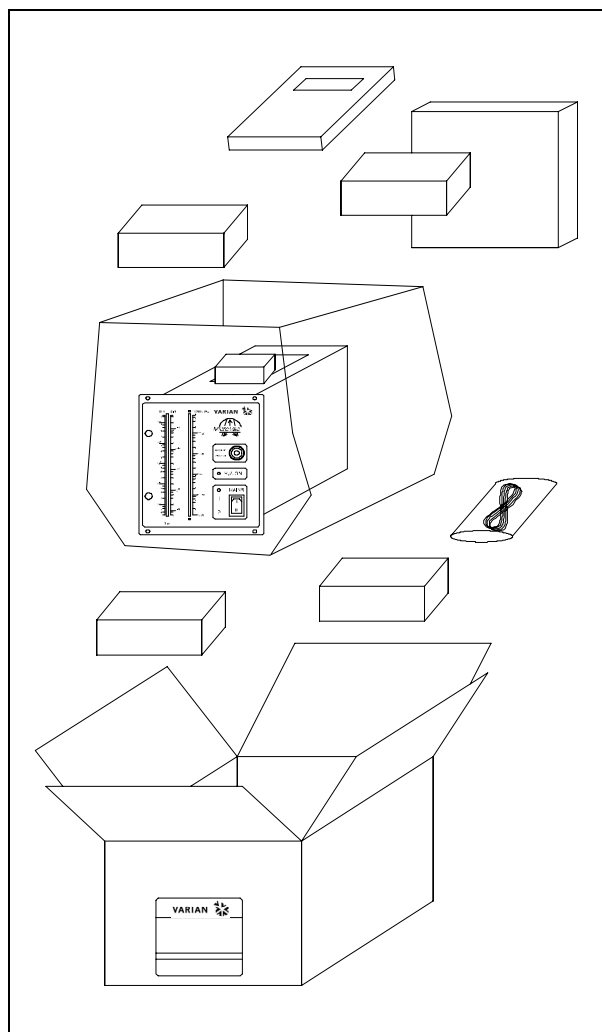
- temperatura: da -20 °C a +70 °C
- umidità relativa: 0 - 95% (non condensante)

PREPARAZIONE PER L'INSTALLAZIONE

Il controller viene fornito in un imballo protettivo speciale; se si presentano segni di danni, che potrebbero essersi verificati durante il trasporto, contattare l'ufficio vendite locale.

Durante l'operazione di disimballo, prestare particolare attenzione a non lasciar cadere il modulo e a non sottoporlo 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.



Imballo dei controller

Ogni controller giunge dalla Varian predisposto per una certa tensione di alimentazione:

- il modello 929-0201 KINGS type High voltage connector (220 Vac, 50/60 Hz)
- il modello 929-0200 KINGS type High voltage connector (120 Vac, 50/60 Hz)

INSTALLAZIONE



PERICOLO!

Il controller è fornito di un cavo di alimentazione a tre fili con una spina di tipo approvato a livello internazionale. Utilizzare sempre questo cavo di alimentazione ed inserire la spina in una presa con un adeguato collegamento di massa onde evitare scariche elettriche.

All'interno del controller si sviluppano alte tensioni che possono recare gravi danni o la morte. Prima di eseguire qualsiasi operazione di installazione o manutenzione del controller scollegarlo dalla presa di alimentazione.

NOTA

Il controller deve essere installato all'interno di un apposito rack. In ogni caso occorre che l'aria di raffreddamento possa circolare liberamente intorno all'apparato. Non installare e/o utilizzare il controller in ambienti esposti ad agenti atmosferici (pioggia, gelo, neve), polveri, gas aggressivi, in ambienti esplosivi o con elevato rischio di incendio.

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

- temperatura: da 0 °C a +45 °C
- umidità relativa: 0 - 95% (non condensante).

Per il collegamento del controller con la relativa pompa utilizzare il cavo specifico del controller stesso.

Per gli altri collegamenti e l'installazione degli accessori opzionali, vedere la sezione "Technical Information".

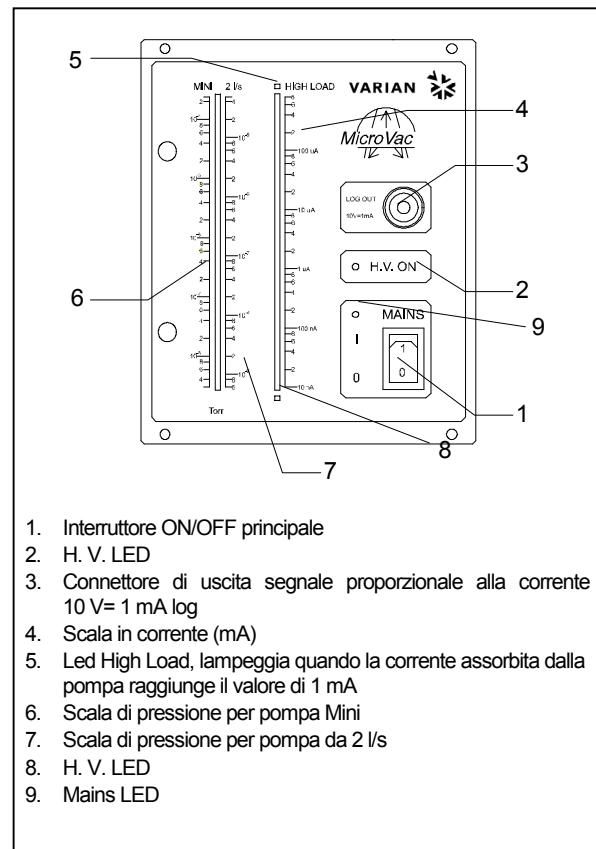
USO

In questo paragrafo sono riportate le principali procedure operative. Per ulteriori dettagli e per procedure che coinvolgono collegamenti o particolari opzionali, fare riferimento al paragrafo "Use" della sezione "Technical Information".

Prima di usare il controller effettuare tutti i collegamenti elettrici e pneumatici e fare riferimento al manuale della pompa collegata.

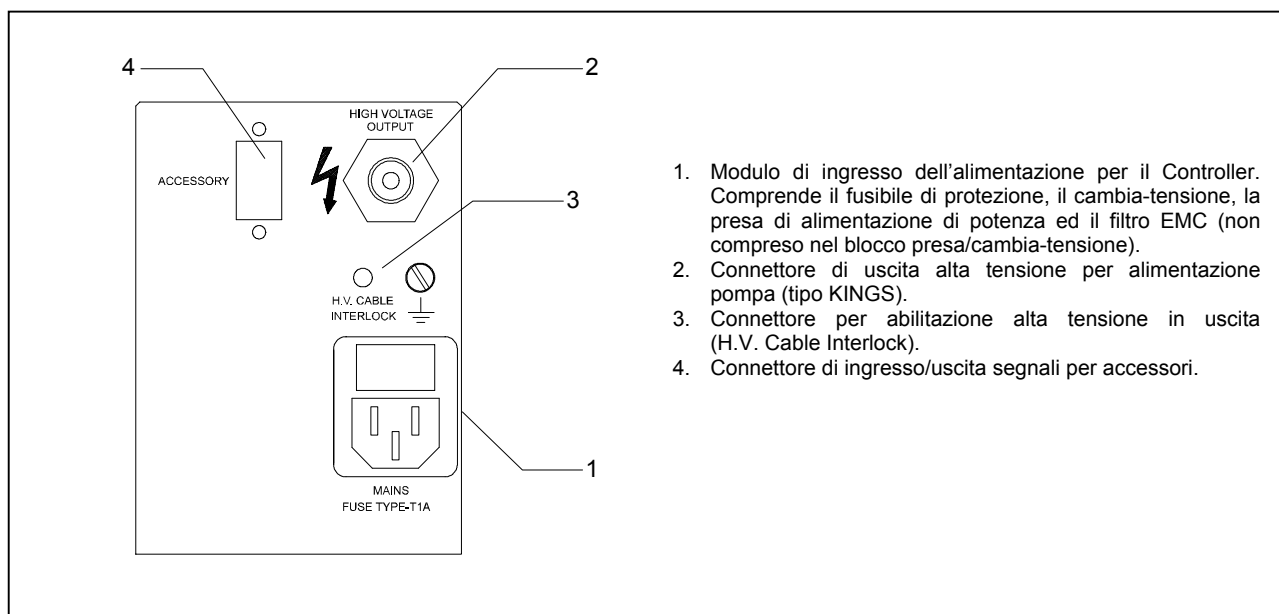
Comandi, Indicatori e Connettori Del Controller

Di seguito sono illustrati sia il pannello frontale che quello posteriore con le interconnessioni. Per maggiori dettagli fare riferimento alla sezione "Technical Information".



1. Interruttore ON/OFF principale
2. H. V. LED
3. Connettore di uscita segnale proporzionale alla corrente 10 V= 1 mA log
4. Scala in corrente (mA)
5. Led High Load, lampeggia quando la corrente assorbita dalla pompa raggiunge il valore di 1 mA
6. Scala di pressione per pompa Mini
7. Scala di pressione per pompa da 2 l/s
8. H. V. LED
9. Mains LED

Pannello frontale del Controller



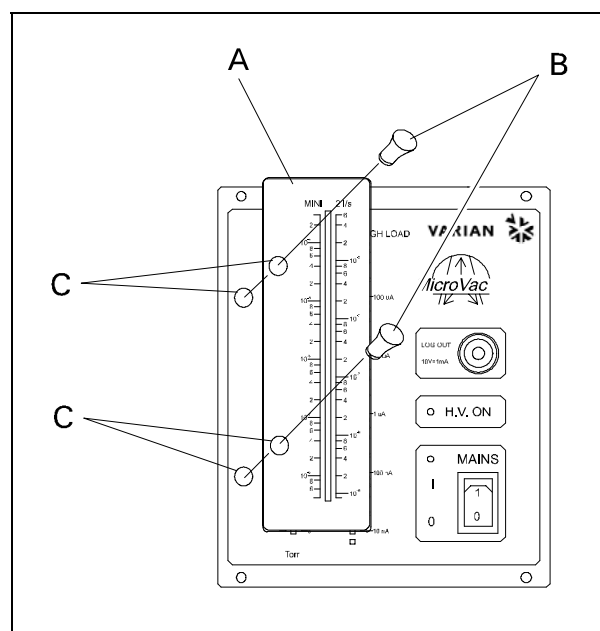
1. Modulo di ingresso dell'alimentazione per il Controller. Comprende il fusibile di protezione, il cambia-tensione, la presa di alimentazione di potenza ed il filtro EMC (non compreso nel blocco presa/cambia-tensione).
2. Connettore di uscita alta tensione per alimentazione pompa (tipo KINGS).
3. Connettore per abilitazione alta tensione in uscita (H.V. Cable Interlock).
4. Connettore di ingresso/uscita segnali per accessori.

Pannello posteriore dei Controller

Installazione scala graduata in Pascal o in Millibar fornita come accessorio

I controller della linea MicroVac vengono forniti con la scala della pressione espressa in Torr (Torricelli); è comunque possibile sostituirla con un'altra graduata in Pa (Pascal) o mBar (Millibar) (fornita come accessorio). Di seguito viene descritto come effettuare tale sostituzione.

Dopo aver estratto dalla confezione degli accessori l'etichetta che interessa, sovrapporre l'etichetta **A** a quella esistente, avendo cura di far coincidere i fori **C**; quindi fissarla utilizzando i fermi a pressione **B**.



Installazione etichetta graduata in Pascal o in Millibar

PROCEDURE DI USO

Accensione del Controller

Per accendere il controller portare l'interruttore principale in posizione ON dopo aver inserito il cavo di alimentazione nella presa di rete.

Avvio della Pompa

La pompa si avvia solo se il controller è acceso e i due interlock (H.V. Cable e Remote ON/OFF) sono cortocircuitati. Per ulteriori informazioni fare riferimento alla sezione "Technical Information".

Arresto della Pompa

Per arrestare la pompa portare in posizione OFF l'interruttore principale posizionato sul pannello frontale.

MANUTENZIONE

I controller della serie MicroVac non richiedono alcuna manutenzione. Qualsiasi intervento deve essere eseguito da personale autorizzato.

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



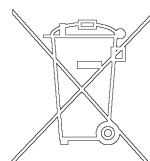
PERICOLO!

Prima di effettuare qualsiasi intervento sul controller scollegare il cavo di alimentazione.

Qualora un controller dovesse essere rottamato, procedere alla sua eliminazione nel rispetto delle normative nazionali specifiche.

SMALTIMENTO

Significato del logo "WEEE" presente sulle etichette. Il simbolo qui sotto riportato è applicato in ottemperanza alla direttiva CE denominata "WEEE". Questo simbolo (**valido solo per i paesi della Comunità Europea**) indica che il prodotto sul quale è applicato, NON deve essere smaltito insieme ai comuni rifiuti domestici o industriali, ma deve essere avviato ad un sistema di raccolta differenziata. Si invita pertanto l'utente finale a contattare il fornitore del dispositivo, sia esso la casa madre o un rivenditore, per avviare il processo di raccolta e smaltimento, dopo opportuna verifica dei termini e condizioni contrattuali di vendita.



ALLGEMEINES

Dieser Apparat ist für Fachbetriebe bestimmt. Vor Gebrauch sollte der Benutzer dieses Handbuch sowie alle weiteren mitgelieferten Zusatzdokumentationen genau lesen. Bei - auch nur teilweiser - Nichtbeachtung der enthaltenen Hinweise, unsachgemäßem Gebrauch durch ungeschultes Personal, nicht autorisierten Eingriffen und Mißachtung der einheimischen, hier zur Geltung kommenden Bestimmungen übernimmt die Firma Varian keinerlei Haftung. Der MicroVac ist ein Hochspannungsnetzgerät niedriger Leistung, das zur Versorgung von Ionenpumpen verwendet wird. Er ist mit einem Mikroprozessor zur Steuerung des Bedienfelds ausgerüstet.

Außer des Steckers zur Versorgung der Pumpe gibt es auch einen Stift, der zur Verriegelung dient. Wenn dieser nicht auf dem Ausgangsstecker eingesteckt ist, liegt keine Spannung an.

In den folgenden Abschnitten sind alle erforderlichen Informationen für die Sicherheit des Bedieners bei der Anwendung des Geräts aufgeführt. Detaillierte technische Informationen sind im Anhang "Technical Information" enthalten.

In dieser Gebrauchsanleitung werden Sicherheitshinweise folgendermaßen hervorgehoben:



GEFAHR!

Die Gefahrenhinweise lenken die Aufmerksamkeit des Bedieners auf eine bestimmte Prozedur oder Praktik, die bei unkorrekter Ausführung schwere Verletzungen hervorrufen können.



ACHTUNG!

Die Warnhinweise vor bestimmten Prozeduren machen den Bediener darauf aufmerksam, daß bei Nichteinhaltung Schäden an der Anlage entstehen können.

ANMERKUNG

Die Anmerkungen enthalten wichtige Informationen, die aus dem Text hervorgehoben werden.

LAGERUNG

Beim Transport und bei der Lagerung der Controller müssen folgende klimatische Verhältnisse eingehalten werden:

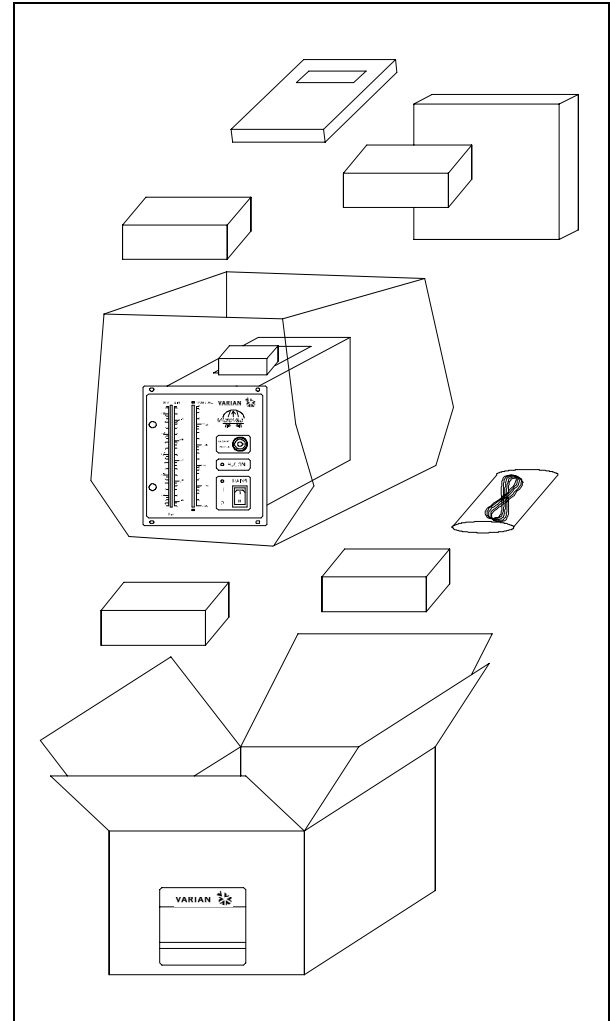
- Temperatur: von -20 °C bis +70 °C
- Relative Luftfeuchtigkeit: 0-95 % (nicht kondensierend)

VOR DER INSTALLATION

Der Controller wird mit einer speziellen Schutzverpackung geliefert. Eventuelle Transportschäden müssen der zuständigen örtlichen Verkaufsstelle gemeldet werden.

Beim Auspacken vorsichtig vorgehen, damit der Controller nicht fällt oder Stößen ausgesetzt wird.

Das Verpackungsmaterial muß korrekt entsorgt werden. Es ist vollständig recyclebar und entspricht der EG-Richtlinie 85/399 für Umweltschutz.



Verpackung der Controller

Alle Varian-Controller sind für eine bestimmte Anschlußspannung ausgelegt:

- das Modell 929-0201 KINGS type High voltage connector (220 V, 50/60 Hz)
- das Modell 929-0200 KINGS type High voltage connector (120 V, 50/60 Hz)

INSTALLATION



GEFAHR!

Der Controller wird mit einem 3-adrigen Netzkabel geliefert, das mit einem den internationalen Normen entsprechenden Stecker ausgerüstet ist. Es sollte immer dieses Netzkabel benutzt werden, das an eine korrekt geerdete Steckdose anzuschließen ist, um Stromentladungen zu vermeiden.

Im Inneren des Controllers entstehen hohe Spannungen, die schwere Schäden verursachen und lebensgefährlich sein können. Vor jedem Montage- bzw. Wartungseingriff muß deshalb der Netzstecker gezogen werden.

ANMERKUNG

Der Controller kann auf einen Tisch oder ein Gestell montiert werden. In beiden Fällen muß auf die ungehinderte Zirkulation der Kühlluft im Bereich des Geräts geachtet werden.

Der Controller darf nicht in Umgebungen installiert u/o benutzt werden, die Witterungseinflüssen (Regen, Frost, Schnee), Staub und aggressiven Gasen ausgesetzt sind und in denen Explosions- und erhöhte Brandgefahr besteht.

Beim Betrieb müssen folgende Umgebungsbedingungen eingehalten werden:

- Temperatur: von +0 °C bis +40 °C
- Relative Luftfeuchtigkeit: 0 - 95 % (nicht kondensierend).

Für den Anschluß des Controllers an die Pumpe muß das zum Controller gehörende Kabel benutzt werden.

Andere Anschlüsse und die Installation optionalen Zubehörs ist im Abschnitt "Technical Information" beschrieben.

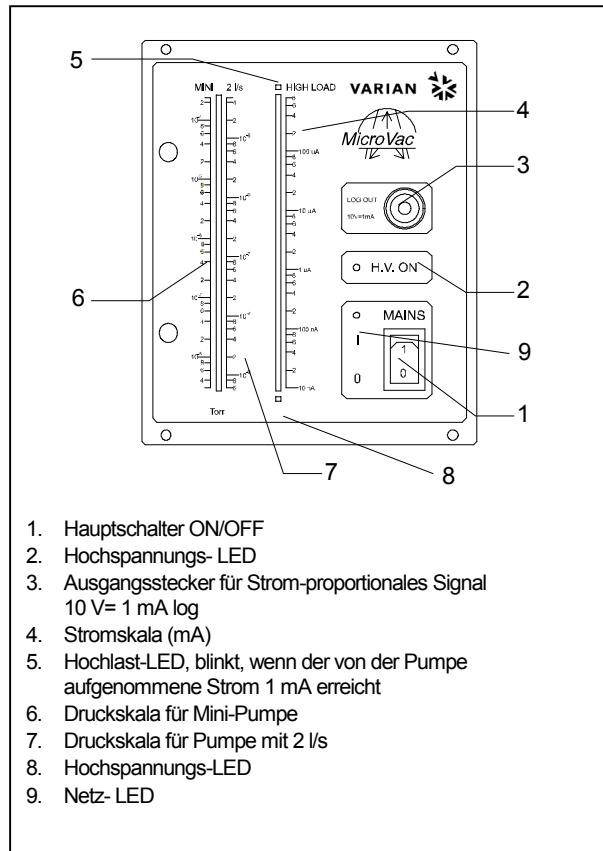
GEBRAUCH

In diesem Kapitel sind die wichtigsten Betriebsvorgänge aufgeführt. Für weitere Hinweise bezüglich Anschlüsse und Montage des bestellbaren Zubehörs siehe Kapitel "Use" im Anhang zu "Technical Information".

Vor Benutzung des Controllers sämtliche elektrischen und pneumatischen Anschlüsse ausführen, und die Betriebsanleitung der angeschlossenen Pumpe durchlesen.

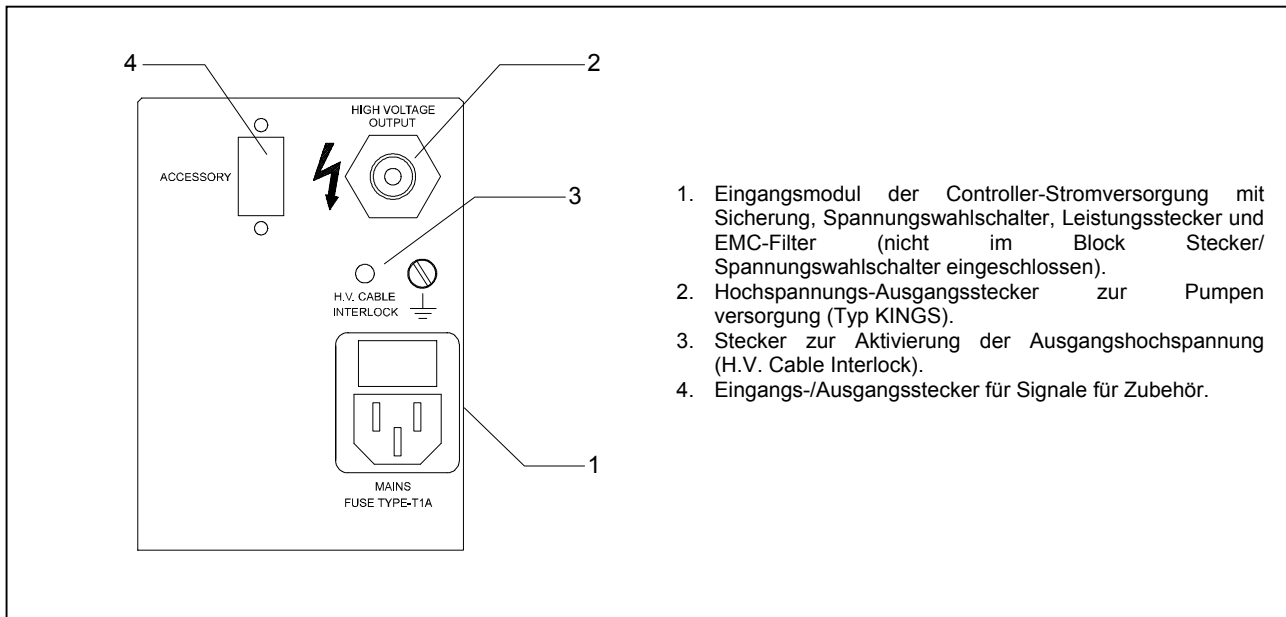
Steuerungen, Anzeigen und Anschlüsse des Controllers

Nachstehend werden das Bedienfeld des Controllers sowie die Anschlußfelder beschrieben. Für weitere Einzelheiten siehe "Technical Information".



1. Hauptschalter ON/OFF
2. Hochspannungs- LED
3. Ausgangsstecker für Strom-proportionales Signal 10 V= 1 mA log
4. Stromskala (mA)
5. Hochlast-LED, blinkt, wenn der von der Pumpe aufgenommene Strom 1 mA erreicht
6. Druckskala für Mini-Pumpe
7. Druckskala für Pumpe mit 2 l/s
8. Hochspannungs-LED
9. Netz- LED

Bedienfeld der Controller



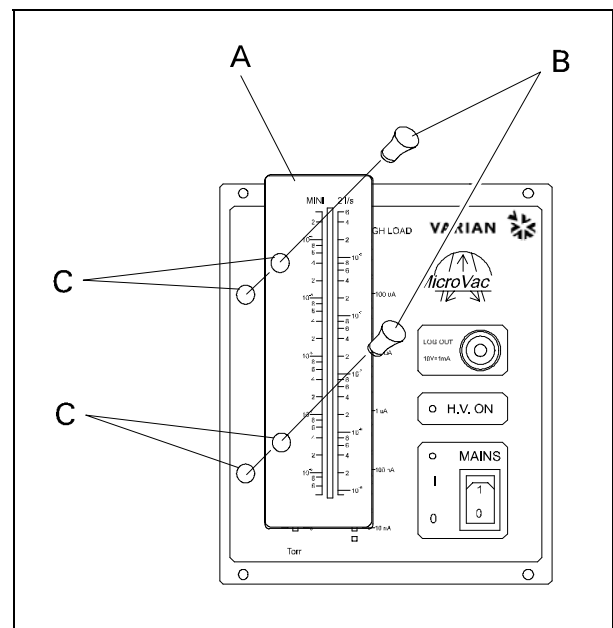
1. Eingangsmodul der Controller-Stromversorgung mit Sicherung, Spannungswahlschalter, Leistungsstecker und EMC-Filter (nicht im Block Stecker/ Spannungswahlschalter eingeschlossen).
2. Hochspannungs-Ausgangsstecker zur Pumpenversorgung (Typ KINGS).
3. Stecker zur Aktivierung der Ausgangshochspannung (H.V. Cable Interlock).
4. Eingangs-/Ausgangsstecker für Signale für Zubehör.

Rücktafel der Controller

Installation der als Zubehör gelieferten Skala in Pascal oder Millibar

Die Controller der MicroVac Serie werden mit Druckska in Torr (Torricelli) geliefert. Diese kann jedoch durch eine solche in Pa (Pascal) oder mBar (Millibar) ersetzt werden, die als Zubehör geliefert wird. Im folgenden ist dieser Austausch beschrieben.

Das betreffende Etikett aus der Zubehörverpackung ziehen. Dies Etikett **A** über den vorhandenen legen. Dabei darauf achten, daß die Löcher **C** übereinander liegen. Dann mit den Druckknöpfen **B** fest machen.



BEDIENUNG

Einschalten des Controllers

Zum Einschalten des Controllers genügt es, das Netzkabel an die Steckdose anzuschließen.

Pumpenstart

Die Pumpe startet nur, wenn der Controller eingeschaltet ist und die beiden Verriegelungen (Hochspannungskabel und Remote ON/OFF) kurzgeschlossen sind. Weiteres findet sich im Abschnitt "Technical Information".

Pumpenstopp

Zum Stoppen der Pumpe muß der Hauptschalter auf dem Bedienfeld auf OFF gesetzt werden.

WARTUNG

Die Controller der MicroVac Serie brauchen keinerlei Wartung. Alle Eingriffe dürfen nur von autorisiertem Personal vorgenommen werden.

Bei Defekten kann der Reparatur Service von Varian oder der "Varian Advance Exchange Service" in Anspruch genommen werden, der den defekten Controller durch ein Austauschgerät ersetzt.



GEFAHR!

Vor jedem Eingriff am Controller muß der Netzstecker gezogen werden.

Eine eventuelle Verschrottung muß unter Einhaltung der einschlägigen landesüblichen Vorschriften erfolgen.

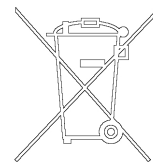
ENTSORGUNG

Bedeutung des "WEEE" Logos auf den Etiketten.

Das folgende Symbol ist in Übereinstimmung mit der EU-Richtlinie WEEE (Waste Electrical and Electronic Equipment) angebracht.

Dieses Symbol (**nur in den EU-Ländern gültig**) zeigt an, dass das betreffende Produkt nicht zusammen mit Haushaltsmüll entsorgt werden darf sondern einem speziellen Sammelsystem zugeführt werden muss.

Der Endabnehmer sollte daher den Lieferanten des Geräts - d.h. die Muttergesellschaft oder den Wiederverkäufer - kontaktieren, um den Entsorgungsprozess zu starten, nachdem er die Verkaufsbedingungen geprüft hat.



INDICATIONS GENERALES

Cet appareillage a été conçu en vue d'une utilisation professionnelle. L'utilisateur doit lire attentivement cette notice d'instructions ainsi que toute autre indication supplémentaire fournie par Varian, avant l'utilisation de l'appareil. Varian décline toute responsabilité quant à : non-respect total ou partiel des instructions pour l'utilisation, mauvais usage par du personnel non formé, opérations non autorisées usage contraire aux réglementations nationales spécifiques.

Micro Vac est un alimentateur à haute tension, faible puissance, conçu pour alimenter les pompes ioniques; il est équipé d'un microprocesseur pour le pilotage du panneau avant.

Il est doté d'un connecteur pour l'alimentation de la pompe et d'une broche d'interverrouillage. Si cette dernière n'est pas branchée sur le connecteur de sortie le dispositif n'est pas alimenté en tension.

Les paragraphes suivants donnent toutes les indications nécessaires pour garantir la sécurité de l'opérateur pendant l'utilisation de l'appareillage. Des renseignements plus détaillés se trouvent dans la section "Technical Information".

Cette notice utilise les signes conventionnels suivants:



DANGER!

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



ATTENTION!

Les messages d'attention apparaissent avant certaines procédures qui, si elles ne sont pas observées, pourraient endommager sérieusement l'appareillage.

NOTE

Les notes contiennent des renseignements importants, isolés du texte.

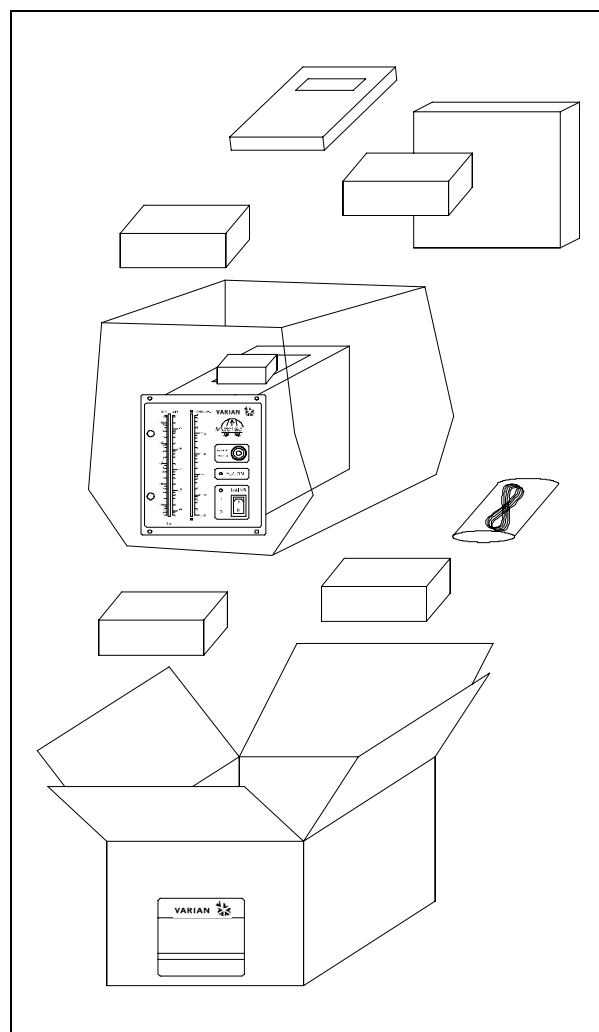
EMMAGASINAGE

Pendant le transport et l'emménagement des Micro Vaccontrôleurs, il faudra veiller à respecter les conditions environnementales suivantes:

- Température: de - 20 °C à + 70 °C
- Humidité relative: 0 - 95% (non condensante).

PREPARATION POUR L'INSTALLATION

Le contrôleur est fourni dans un emballage de protection spécial; si vous constatez des marques de dommages pouvant s'être produits pendant le transport, adressez-vous aussitôt au bureau de vente local. Pendant l'opération d'ouverture de l'emballage, veiller tout particulièrement à ne pas laisser tomber le contrôleur et à ne lui faire subir aucun choc. Ne pas jeter l'emballage dans la nature. Le matériel est entièrement recyclable et il est conforme à la directive CEE 83/399 en matière de protection de l'environnement.



Emballage des Contrôleurs

Chaque contrôleur est fourni par Varian prééquipé pour une certaine tension d'alimentation:

- modèle 929-0201 KINGS type High voltage connector (220 Vca, 50/60 Hz)
- modèle 929-0200 KINGS type High voltage connector (120 Vca, 50/60 Hz)

INSTALLATION



DANGER!

Le contrôleur est doté d'un câble d'alimentation à trois fils avec une fiche du type approuvé au niveau international. Utiliser toujours ce câble d'alimentation et introduire la fiche dans une prise pourvue d'un branchement approprié à la masse, afin d'éviter toute décharge électrique. A l'intérieur du contrôleur se développent de hautes tensions qui peuvent provoquer de graves dommages et même la mort. Avant d'effectuer toute opération d'installation ou d'entretien du contrôleur, le débrancher de la prise d'alimentation.

NOTE

Le contrôleur doit être installé dans une baie prévue à cet effet. Il est en tout cas nécessaire que l'air de refroidissement puisse circuler librement à l'intérieur de l'appareil. Ne pas installer et/ou utiliser le contrôleur dans des milieux exposés aux agents atmosphériques (pluie, gel, neige), aux poussières, aux gaz de combat ni dans des milieux explosifs ou à risque élevé d'incendie.

Pendant le fonctionnement, il est nécessaire de respecter les conditions environnementales suivantes:

- Température: 0 °C à + 40 °C
- Humidité relative: 0 - 95% (non condensante).

Pour la connexion du contrôleur à la pompe correspondante, utiliser le câble du contrôleur prévu à cet effet.

Pour les autres connexions et pour l'installation des accessoires en option, voir la section "Technical Information".

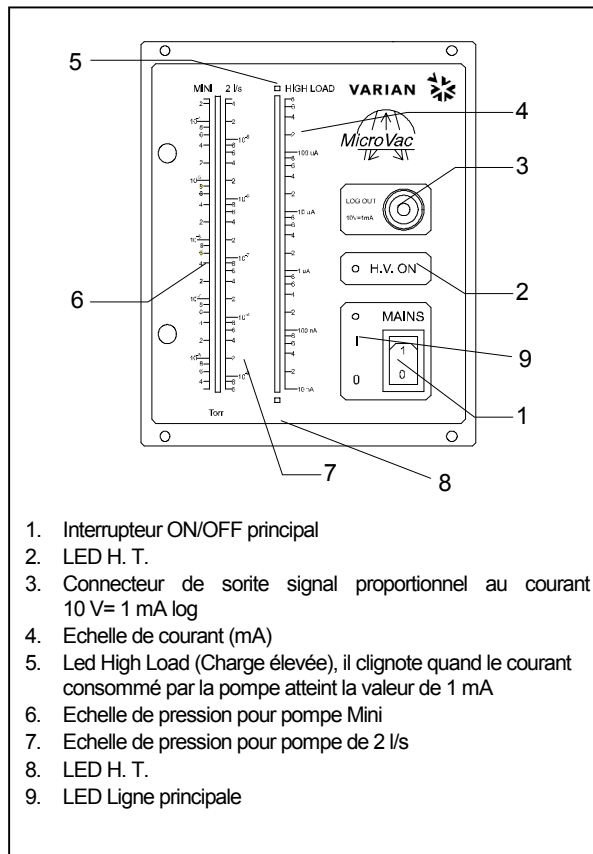
UTILISATION

Ce paragraphe décrit les principales procédures de fonctionnement. Pour tout autre complément d'information et pour les procédures concernant des connexions ou des éléments en option, se reporter au paragraphe "Use" de la section "Technical Information".

Avant d'utiliser le contrôleur, effectuer toutes les connexions électriques et pneumatiques et se référer à la notice de la pompe connectée.

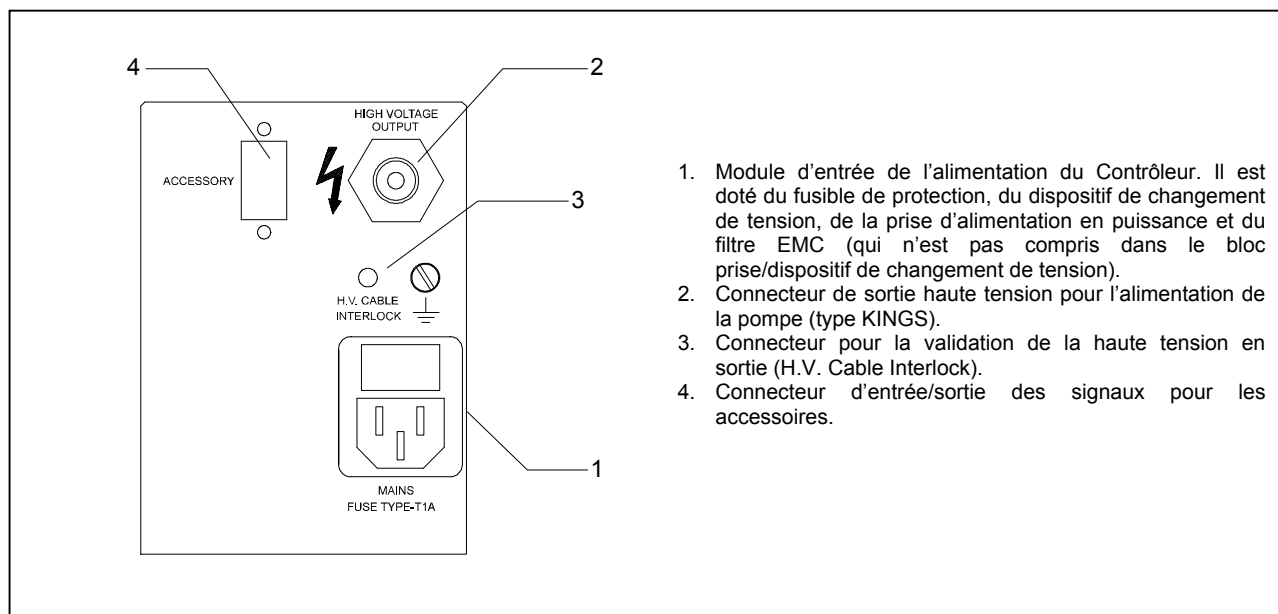
Commandes, Indicateurs et Connecteurs du Contrôleur

La figure ci-après représente le tableau de commande du Contrôleur et les tableaux d'interconnexion. Pour de plus amples détails, se reporter à la section "Technical Information".



1. Interrupteur ON/OFF principal
2. LED H. T.
3. Connecteur de sortie signal proportionnel au courant 10 V= 1 mA log
4. Echelle de courant (mA)
5. Led High Load (Charge élevée), il clignote quand le courant consommé par la pompe atteint la valeur de 1 mA
6. Echelle de pression pour pompe Mini
7. Echelle de pression pour pompe de 2 l/s
8. LED H. T.
9. LED Ligne principale

Tableau avant du Contrôleur



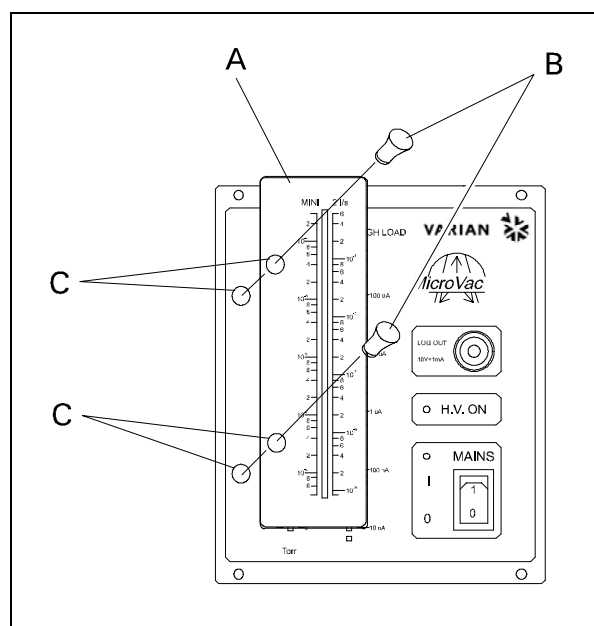
1. Module d'entrée de l'alimentation du Contrôleur. Il est doté du fusible de protection, du dispositif de changement de tension, de la prise d'alimentation en puissance et du filtre EMC (qui n'est pas compris dans le bloc prise/dispositif de changement de tension).
2. Connecteur de sortie haute tension pour l'alimentation de la pompe (type KINGS).
3. Connecteur pour la validation de la haute tension en sortie (H.V. Cable Interlock).
4. Connecteur d'entrée/sortie des signaux pour les accessoires.

Tableau arrière des Contrôleurs

Installation échelle graduée en Pascal ou en Millibar livrée comme accessoire

Les contrôleurs de la gamme MicroVac sont livrés avec l'échelle de la pression exprimée en Torr (Torricelli); toutefois, il est possible de la remplacer avec une autre graduée en Pa (Pascal) ou mBar (Millibar) (livrée comme accessoire). La procédure de remplacement est décrite ci-après.

Après avoir enlevé de l'emballage des accessoires l'étiquette requise, superposer l'étiquette **A** à celle existante, en prenant soin de faire coïncider les trous **C**; la fixer par des dispositifs de fixation par pression **B**.



Installation étiquette graduée en Pascal ou en Millibar

PROCEDURES D'UTILISATION

Mise sous tension du Contrôleur

Pour mettre le contrôleur sous tension, il suffit de mettre l'interrupteur principal sur ON après avoir branché le câble d'alimentation sur la prise du réseau.

Mise en marche de la Pompe

La pompe se met en marche uniquement si le contrôleur est sous tension et si les deux dispositifs d'interverrouillage (H.V. Cable et Remote ON/OFF) sont court-circuités. Pour tout autre complément d'information se reporter à la section "Technical Information".

Arrêt de la Pompe

Pour arrêter la pompe, mettre l'interrupteur principal situé sur le tableau avant sur OFF.

ENTRETIEN

Les contrôleurs de la série MicroVac ne requièrent aucun entretien. Toute intervention doit être effectuée par du personnel autorisé.

En cas de panne, il est possible de faire appel au service de réparation Varian ou au "Varian advance exchange service", qui permet d'obtenir un contrôleur régénéré à la place de celui en panne.



DANGER!

Avant d'effectuer toute intervention sur le contrôleur, débrancher le câble d'alimentation.

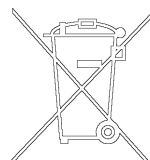
Si un contrôleur doit être mis au rebut l'éliminer conformément aux réglementations nationales en la matière.

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 MicroVac is a high voltage and low power feeder used to feed the ionic pumps; it is equipped with a microprocessor used to control the front panel.

In addition to the connector to feed the pump, there is also a jack acting as an interlock; if it is not inserted into the output connector, no voltage is present.

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.

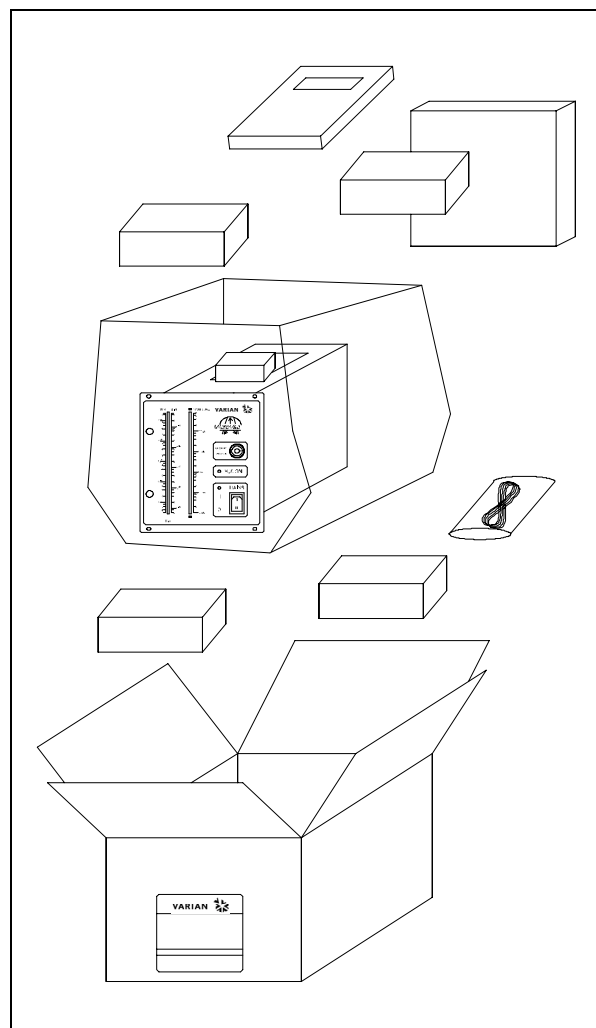
STORAGE

When transporting and storing the MicroVacs, 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.



Controller Packing

Each controller is factory set for a specific power supply:

- model 929-0201 KINGS type High voltage connector (220 Vac, 50/60 Hz)
- model 929-0200 KINGS type High voltage connector (120 Vac, 50/60 Hz)

INSTALLATION



WARNING!

The controller is equipped with a 3-wire power cord and plug (internationally approved) for user's safety. Use this power cord and plug in conjunction with a properly grounded power socket to avoid electrical shock. High voltage developed in the controller can cause severe injury or death. Before servicing the unit, disconnect the input power cable.

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)

To connect the controller to the pump use the specific cable supplied with the controller.

See the section "Technical Information" for detailed information about the above mentioned and the other connections, and about the options installation.

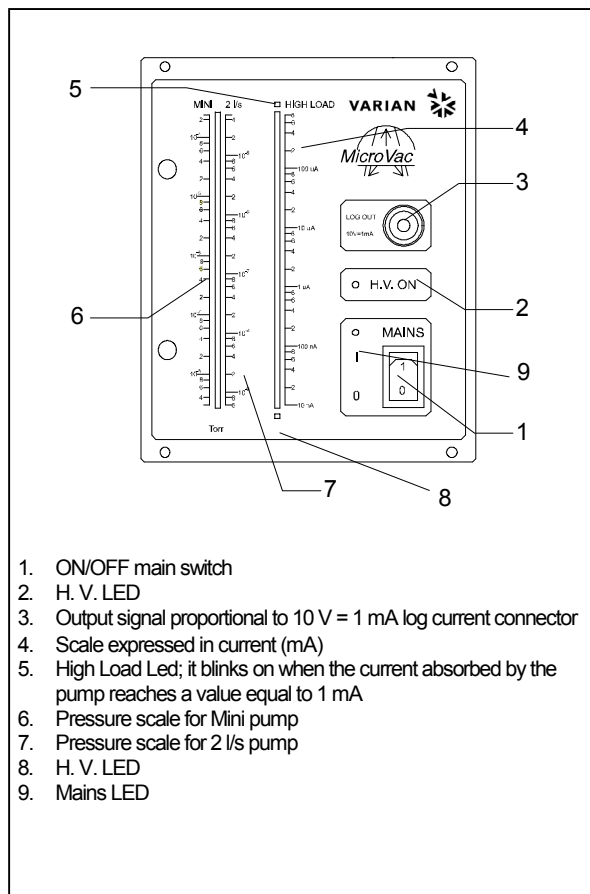
USE

This paragraph describes the fundamental operating procedures. Detailed information and operating procedures that involve optional connections or options are supplied in the paragraph "USE" of the section "Technical Information".

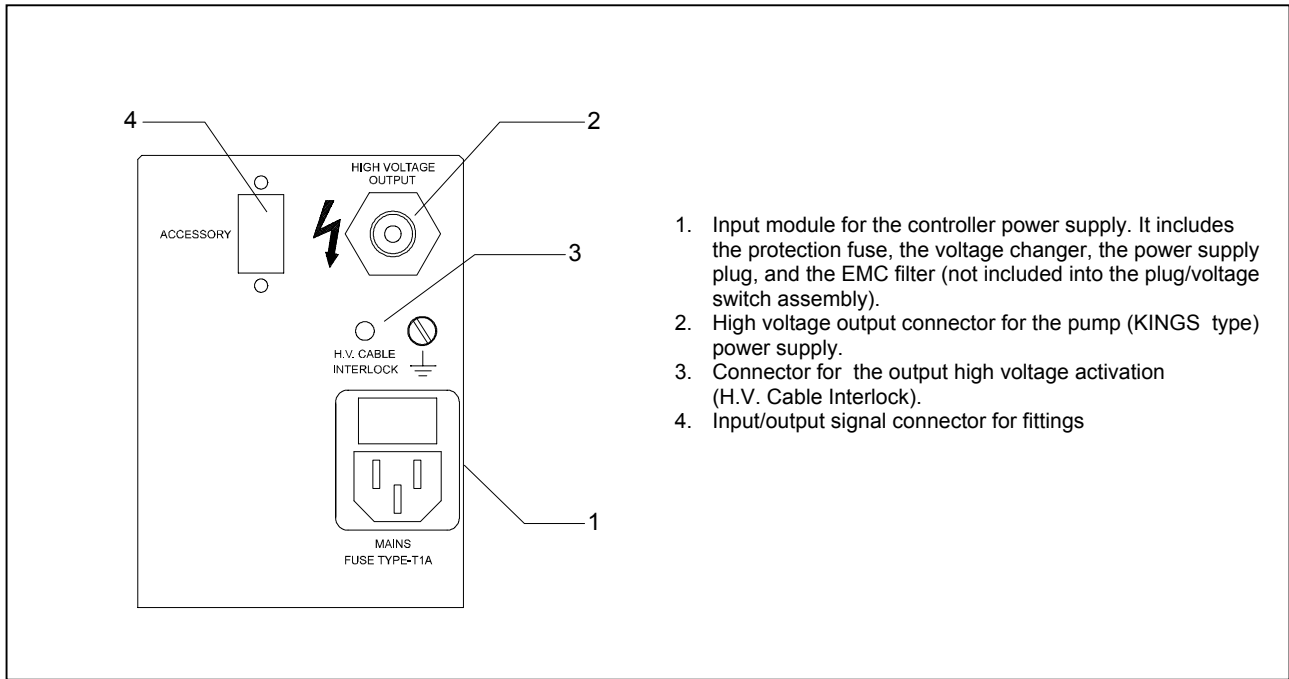
Make all vacuum manifold and electrical connections and refer to the pump instruction manual prior to operating the controller.

Controller Controls, Indicators and Connectors

The following paragraph illustrates either the front and rear panel with its interconnections. More details are contained in the appendix "Technical Information".



Controller Front Panel

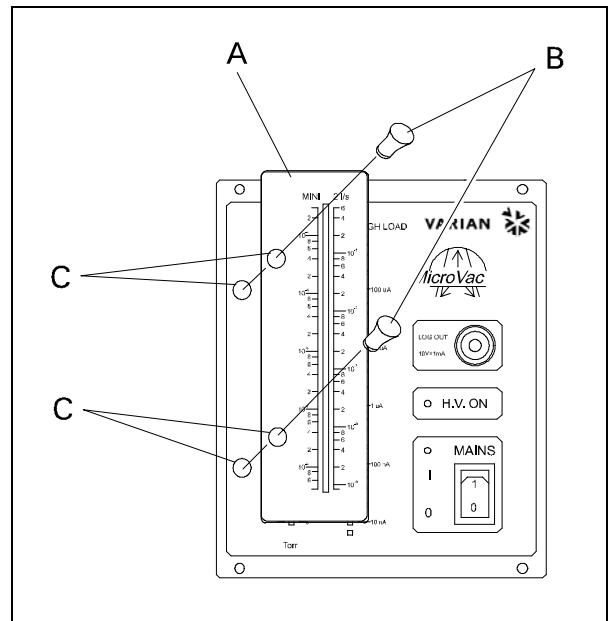


Controller Rear Panel

Pascal or Millibar Graduated Scale Installation (Supplied as a Fitting)

The MicroVac series controllers are supplied with the pressure scale expressed in Torr (Torricelli); however, it is possible to replace it with another one, a Pa (Pascal) or mBar (Milibar) graduated scale (supplied as a fitting). To replace, proceed as follows.

After removing the desired label from the fitting package, put label **A** on the existing one, matching the holes **C**; then fix it using the push locks **B**.



Pascal or Millibar Graduated Label Installation

USE PROCEDURE

Controller Start-up

To start-up the controller, turn the main switch to ON, after plugging the power cable into a suitable power source.

Starting the Pump

The pump starts only when the controller is turned on and the two interlocks (H.V. Cable and Remote ON/OFF) are short-circuited. Please refer to section "Technical Information" for further information.

Pump Shutdown

To shutdown the pump, turn the main switch placed on the front panel to OFF.

MAINTENANCE

The MicroVac series controllers do not require any maintenance interventions. Any intervention must be performed by authorised personnel only.

When a fault has occurred it is possible to use the Varian repair service or the "Varian advance exchange service", that allows to obtain a regenerated controller replacing the faulty one.



WARNING!

Before carrying out any work on the controller, disconnect it from the supply.

If a pump is to be scrapped, it must be disposed of in accordance with the specific national standards.

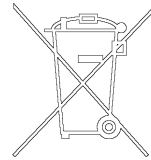
DISPOSAL

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.



MICROVAC CONTROLLER DESCRIPTION

The MicroVac controller is a quarter rack solid state power supply with self protection features, which generates the high voltage for the pump.

The MicroVac ion pump controller is designed to operate the Mini and the 2 l/s ion pumps, but can also operate the 8 l/s ion pump.

The controller is designed to withstand continuous operation at short circuit condition, without any damage to the ion pump or to the controller itself.

The MicroVac controller is available in two versions, which differ in the factory-set input voltage and in the high voltage output connector type.

- Model 929-0200 KINGS type High voltage connector (120 Vac, 50/60 Hz)
- Model 929-0201 KINGS type High voltage connector (220 Vac, 50/60 Hz)

A voltage change over allows to select different operating voltages.

Inspect the controller for any shipping damage.

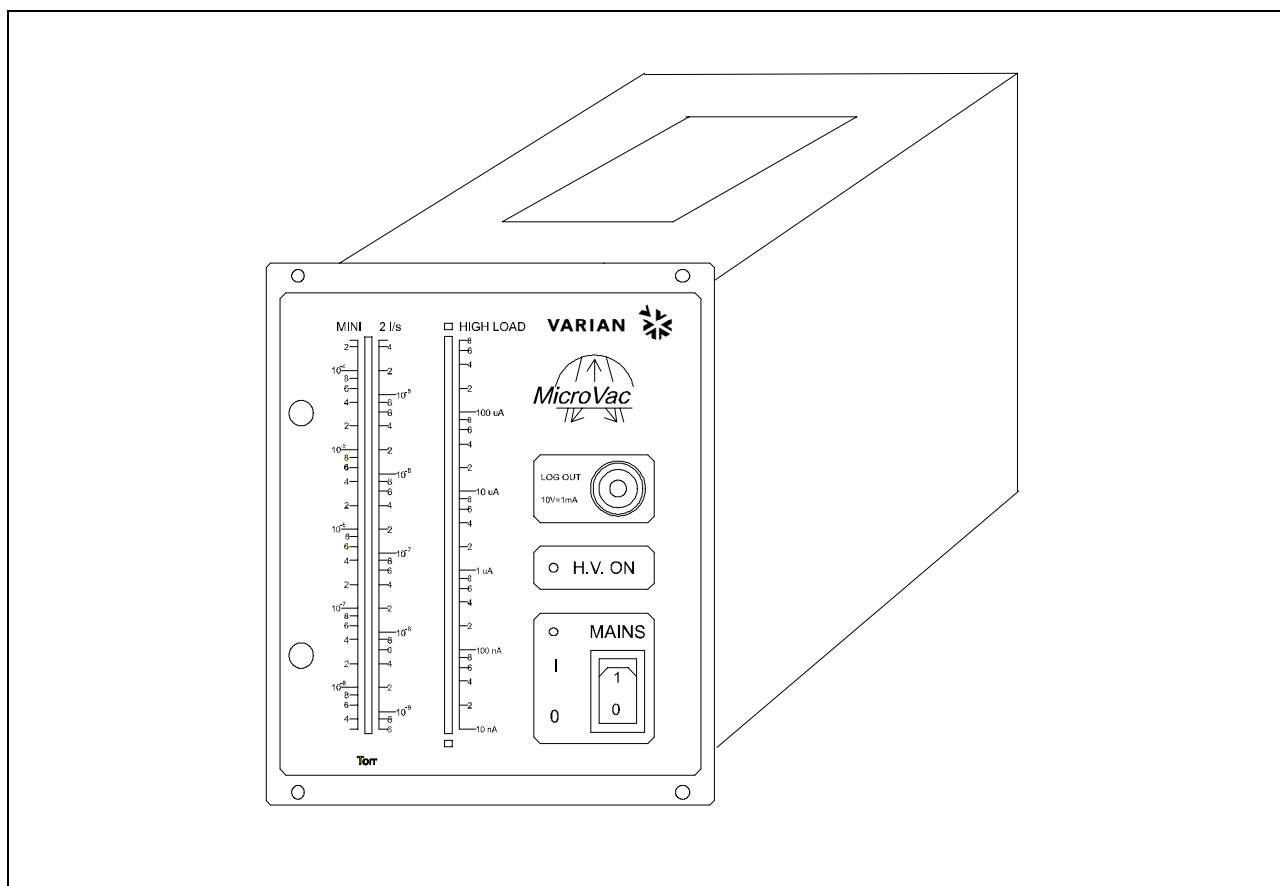
- Model 929-0200 is factory set for 120 Vac operation.
- Model 929-0201 is factory set for 220 Vac operation.



WARNING!

The MicroVac controller is equipped with a 3-wire power cord and plug (internationally approved) for user's safety. Use this power cord and plug in conjunction with a properly grounded power socket to avoid electrical shock.

High voltage developed in the controller can cause severe injury or death. Before servicing the unit, disconnect the input power cable.

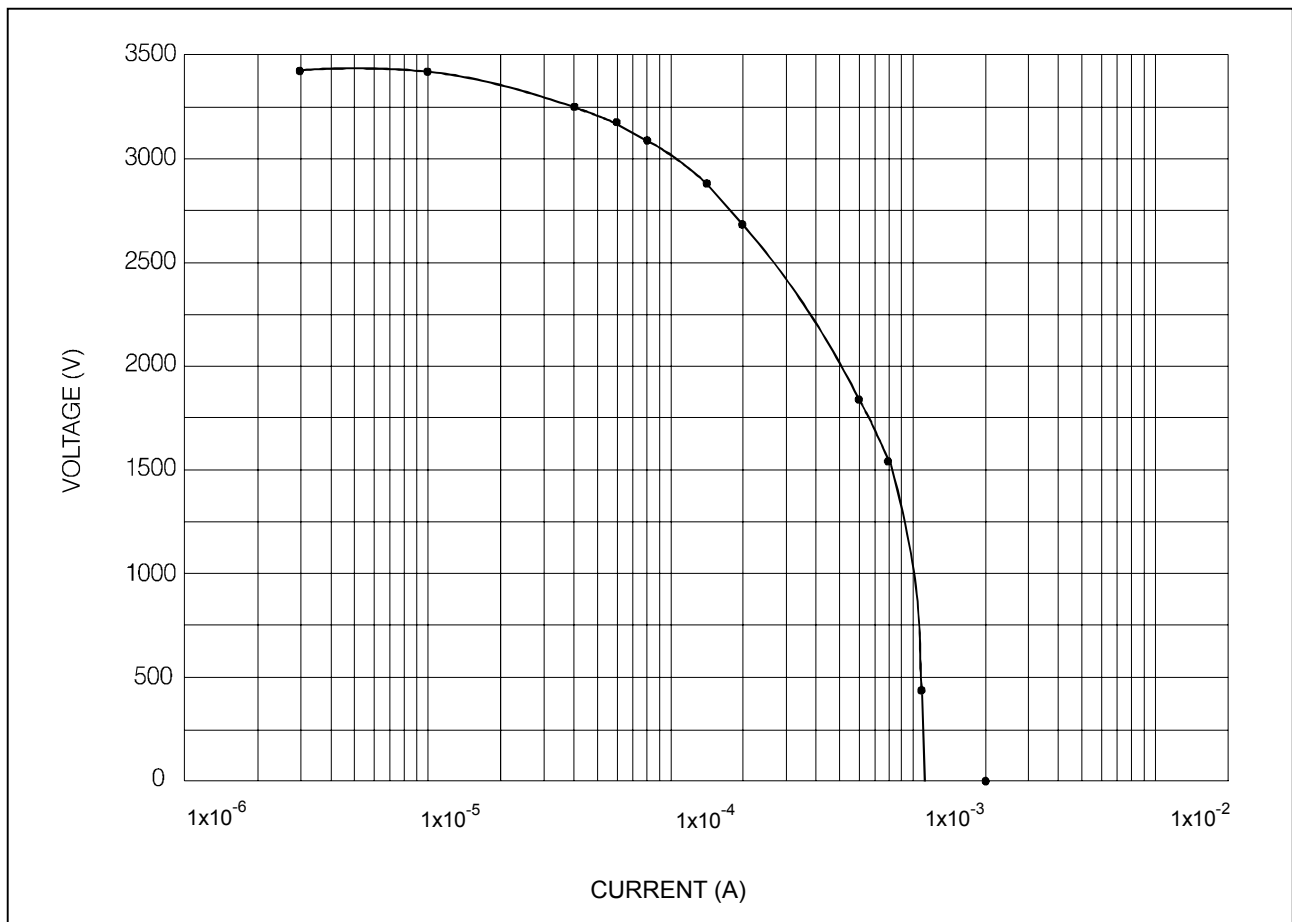


MicroVac Controller

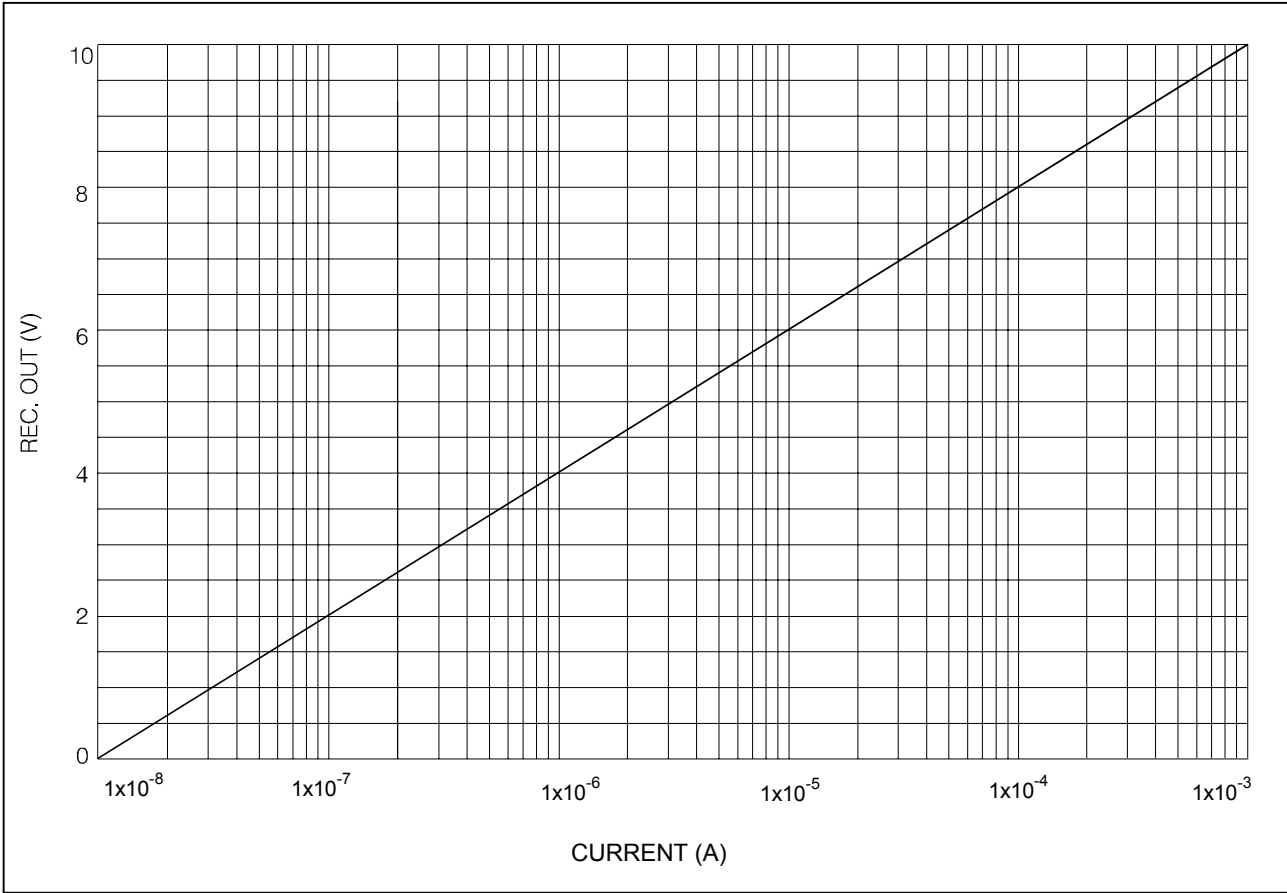
CONTROLLER SPECIFICATIONS

Operation	Mini, 2 l/s pumps
Input:	
Voltage	100, 120, 220, 240 Vac $\pm 10\%$, 1-phase
Frequency	47 to 63 Hz
Power	40 VA maximum
Output:	
Voltage	3.300 Vdc nominal $\pm 10\%$,
Current	1 mA (short circuit)
Power	1.2 W maximum
Current Recorder	
Output:	
- Log Rec Out (see attached graphs)	0 to 10 Vdc (10 V correspond to 1 mA; 10 nA resolution)
Voltage Recorder	
Output:	
- Rec Out	0 to 3.3 V corresponding to 0 to 3.3 KV with 1 V corresponding to 1 KV in linear mode) Available at pins 4 and 8 of rear panel Accessory connector.

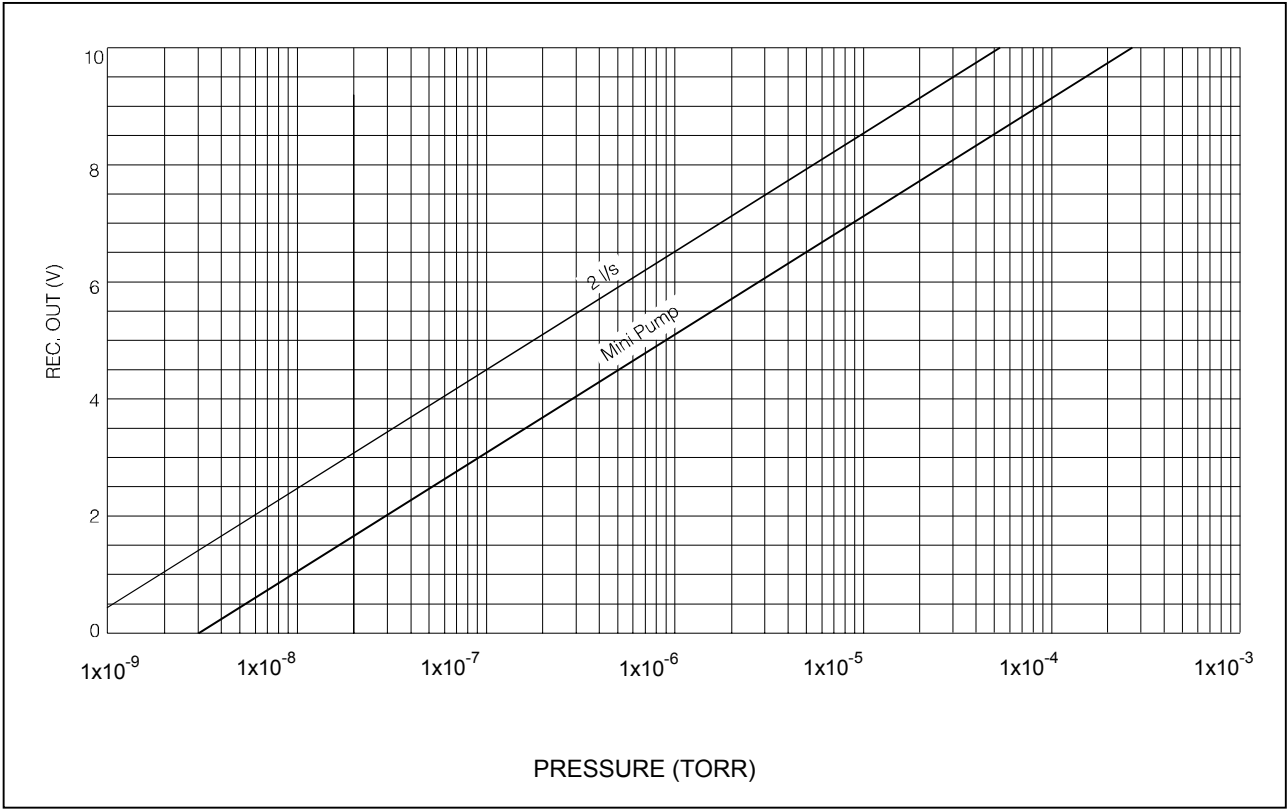
Operating temperature	0 °C to +45 °C
Storage temperature	-20 °C to +70 °C
Fuse (mains)	2 x T 1A (slow blow) disregarding the mains
Radio interference suppression	EN 55011 class A group 1 EN 61000-4 -2/3/4
Safety	EN 61010 - 1
Installation category	II
Pollution degree	2
Output Connector:	
- High voltage	KINGS type: P/N 10664-I for Model 929-0200 and 929-0201
- Accessory	J 101 input/output signal (9- pin "D" type socket)
Cable	Mains, 3 meters long
Weight:	1.7 Kg (4 lbs)



Pump current/voltage diagram



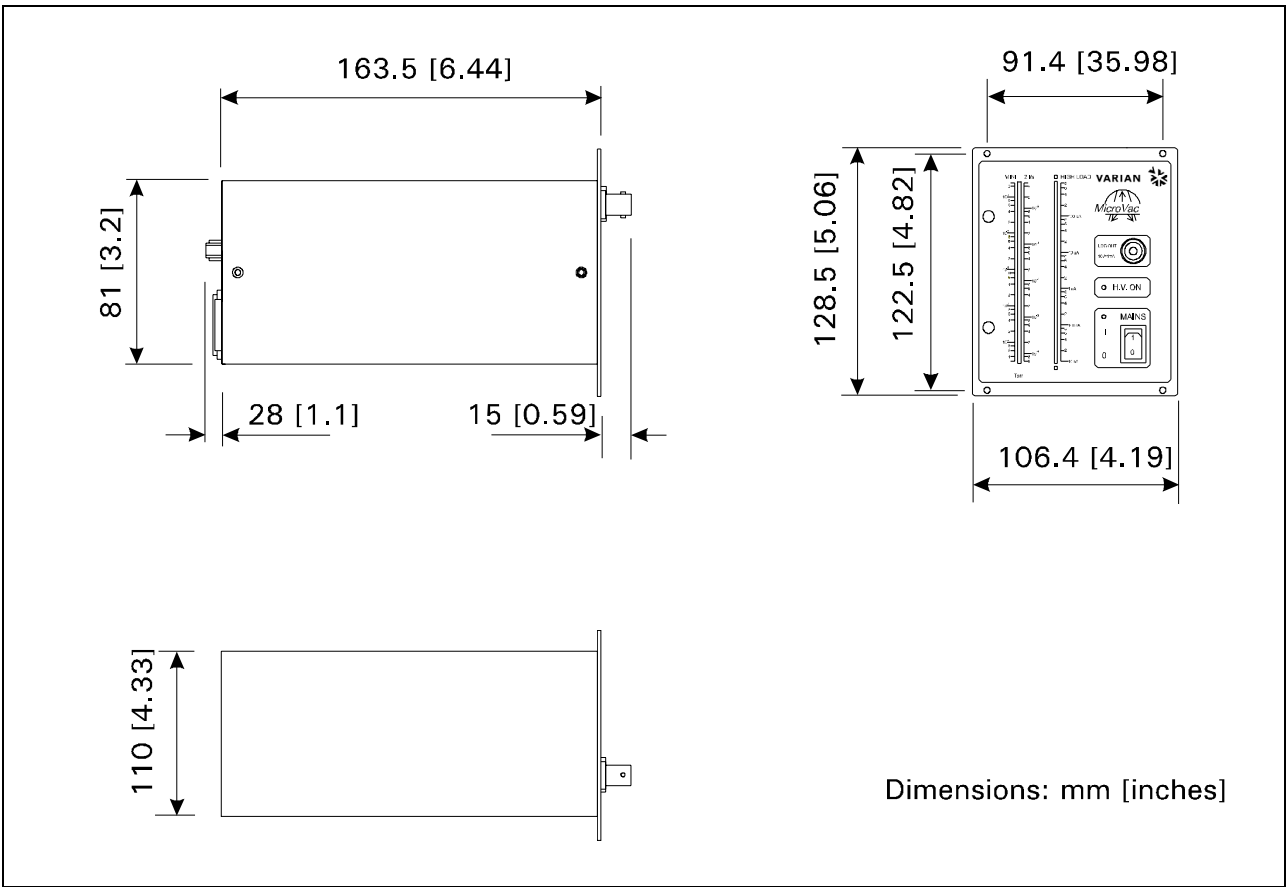
Voltage/current diagram on front connector



Pressure/voltage diagram on front connector for 2 l/s pump and Minipump

CONTROLLER OUTLINE

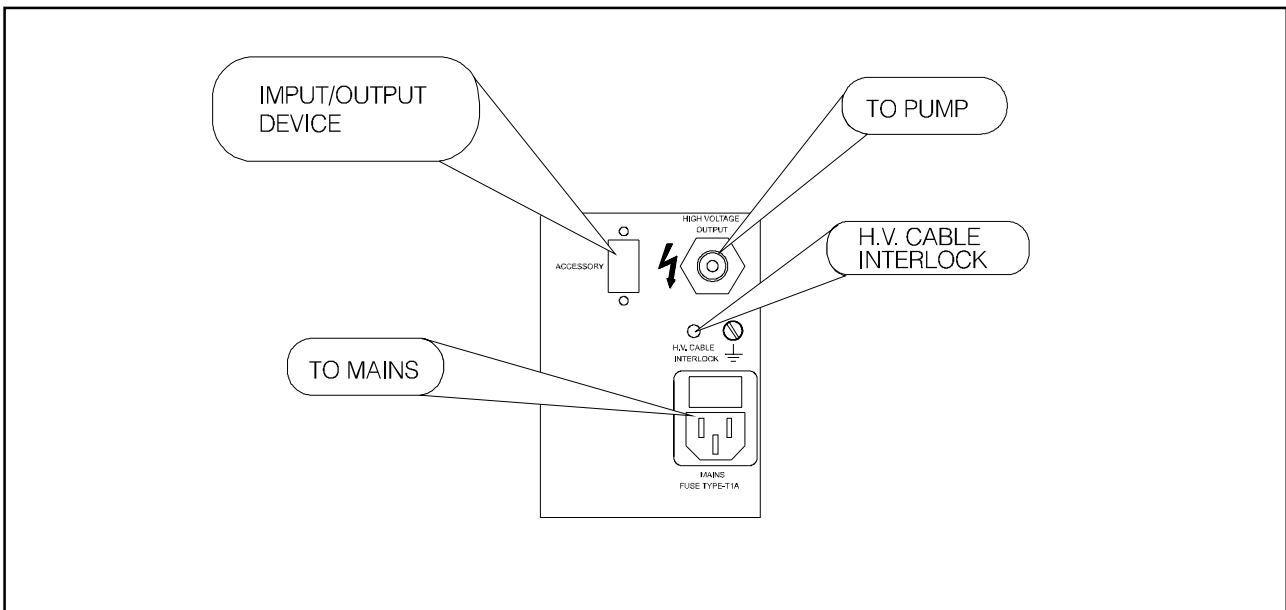
The outline dimensions for the MicroVac controllers are shown in the following figures.



Controller outline

INTERCONNECTIONS

The following figure shows the Controller interconnections.

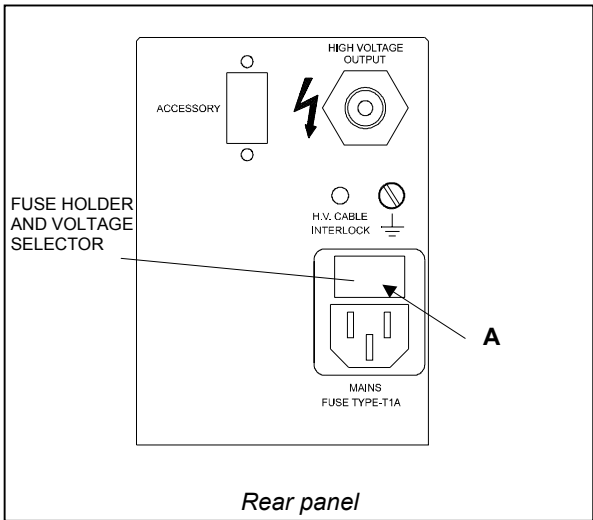


Controller interconnections

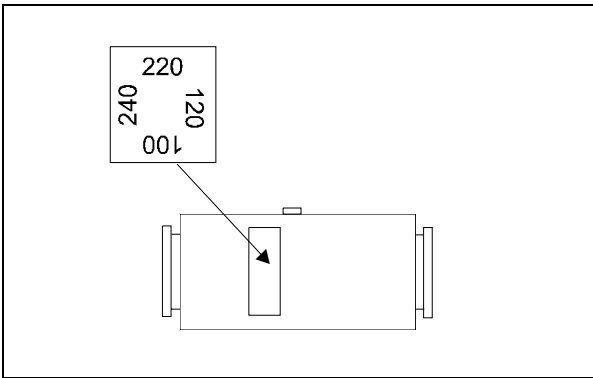
FUSE HOLDER AND VOLTAGE CHANGER ASSEMBLY

If a change in line voltage operation is desired, proceed as follows:

- Unplug the power cord from the controller rear panel socket.
- On the power entry module (rear panel), check back door for voltage selector set.
- Using a small screwdriver, pull out the voltage selector and fuses by levering in position A.
- Replace the fuse.
Use only T-type fuses of the following characteristics:
- 100/120 Vac 1 A
- 220/240 Vac 1 A



- Select the operating voltage, then firmly insert the voltage selector and fuses in place.



- Check voltage selector window for correct set and connect the power cord.

Input/Output Interconnections

All input/output signals are accessible at J001 accessory connector.

With the provided P001 mating connector make the connections with AWG 24 (0.24 mm²) - or smaller wire - to the pins indicated in following figure, to obtain the desired capability.

Input Signals

Pin 3-7 Remote high voltage ON/OFF or high voltage interlock; requires a permanent closed pin contact.

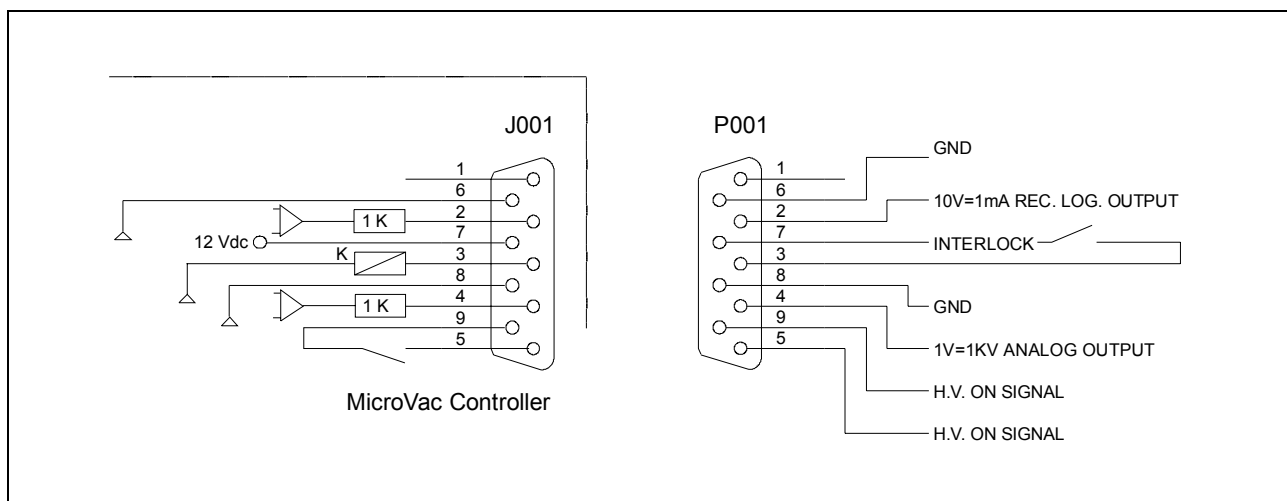
NOTE

Pin 3-7 must be shorted to allow the high voltage output if no remote interlock contact is connected.

Output Signals

The front panel REC.OUT connector is a duplicate of this signal on a BNC connector.

PIN	DESCRIPTION
2-6	Current recorder output (pin 2 signal out, pin 6 ground). The output voltage 0 to +10 Vdc is proportional to the pump current 0 to 1 mA (e.g. 10 Vdc correspond to 1 mA). The resolution is 10 mV minimum.
4-8	Voltage recorder output (pin 4 signal out, pin 8 ground). The output voltage 0 to 3 V is proportional to the controller high voltage output 0 to 3 kV (e.g. 1 V corresponds to 1 kV in linear mode).
5-9	High voltage indication contact. This pure contact (which carries 1 A at 250 Vac and 0.2 A at 30 Vdc) is open when the high voltage is off and closes when the high voltage is on.



P001 mating connector and J001 accessory connector

Pump Connection

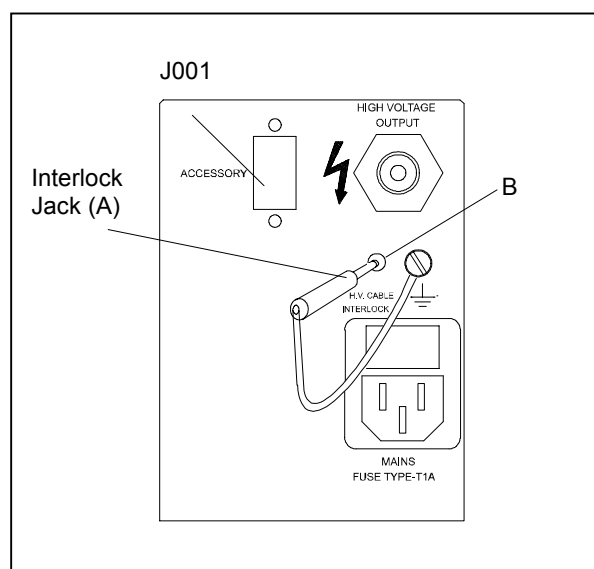
The pump is connected to the controller rear panel via the high voltage connector by a coaxial high voltage cable assembly.



WARNING!

High voltage can cause severe injury or death. Before installing or removing the connector:

- Turn the power off.
- When connecting the cable to 2 l/s pumps, or larger, be sure that the ground spring is in place on the high voltage connection of the pump.
- Install the pump connector and secure it with screws.
- Plug the controller connector.



Interlock Jack position

Interlock

The interlock is a safety device designed by Varian to prevent serious damages to the operator due to high voltage on the pump power connector.

Therefore, two serial electrically connected interlocks are planned; both of them should be closed, so that the pump can activate.

- H.V. Cable Interlock consists of a Jack (A) grounded through a cable connected to the metal frame.
- Remote ON/OFF Interlock consists of a P001 connector (included) whose 3 and 7 pins are short-circuited (please refer to the previous figure).

In order to activate the pump, you should:

1. Plug Jack (A) into plug (B).
2. Plug P001 connector into J001 connector.
3. Place the main switch to ON.

USE

General

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

NOTE

The accessory P001 connector should be left in position including the jumper between pin 3 and 7 if no external connection has been made.



CAUTION!

Before plugging in the controller power cable, be sure that the selected operating voltage matches the power source to avoid equipment damage.

- Plug the controller power cable into a suitable power source.
- Place the ON/OFF switch in the ON position.
- Monitor the VacIon pump current and the controller high voltage output by watching the LED lit, then read the corresponding current and pressure values
- If only the first LED of the bar graph is lit, the current drawn by the pump is less than 10 nA and the voltage output is 3 kV.
- If the entire bar is lit and the High Load LED is blinking, this means that the current is higher than ≥ 1 mA.

Pressure Determination

The bar graph at the left gives the indication of the pressure into the pump. The left scale is for Mini Pump, the right one for the 2 l/s pump.

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.

Remote Control Mode Operation

It is possible to remotely switch on and off the high voltage using a permanent contact connected to pins 3 and 7 of J001 accessory connector with the mains power ON/OFF switch to ON.

REPLACEMENT

General

Replacement controllers are available on advance exchange basis through Varian service/sales organization.



WARNING!

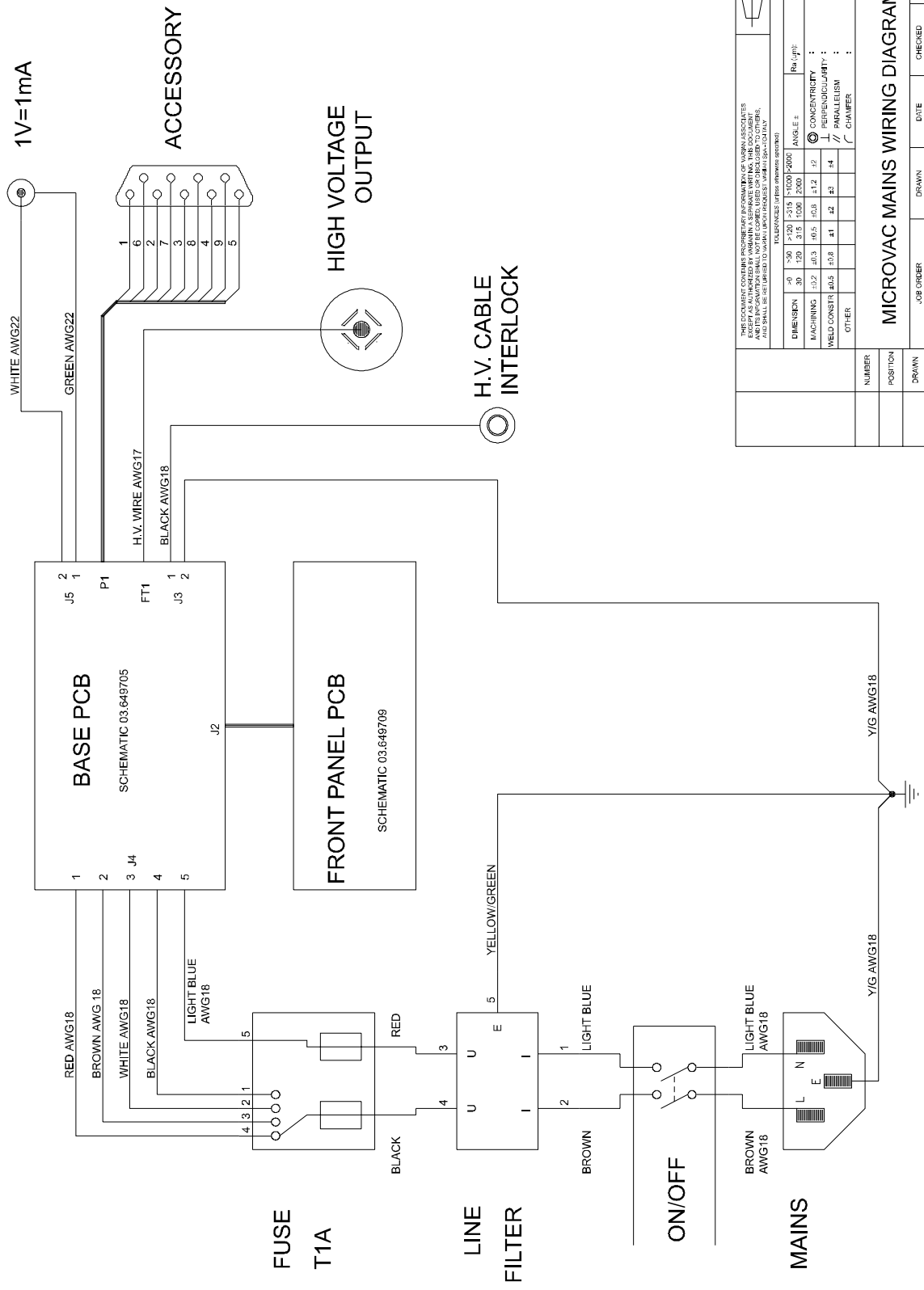
- High voltage in the controller can cause severe injury or death. Before servicing, turn power off and remove the power cable.

Troubleshooting

- No current/voltage LED bar graph lit with mains power ON but H.V. ON LED off (Mains LED on).
 - Verify mains connections and power fuses
 - Verify on P001 that pins 3-7 are shorted.
 - Verify the H.V. cable interlock
- Vac Ion pump is operating at High pressure and only the first LED is lit.
 - No high voltage output. Replace the unit.
- Vac Ion pump operating at Low pressure and all LED are lit.
 - Switch power off and disconnect the high voltage cable.
 - Switch power on and verify that only one LED is lit. If this happens the high voltage cable or the pump are shorted.
 - If not, replace the unit.

ACCESSORIES AND SPARE PARTS

DESCRIPTION	PART NUMBER
Mating accessory connector P001	03-648487
Fuse T1A (5x20 mm)	67.150410-01
Rack adapter	969-9191
Mains cable 120 Vac USA plug	03-660441-02
Mains cable 220 Vac European plug	03-660441-01



		CLASS	
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TOLERANCES (unless otherwise specified)		Re (µin) :	
DIMENSION	ANGLE S		
10	120		
20	240		
30	360		
40	480		
50	600		
60	720		
70	840		
80	960		
90	1080		
100	1200		
110	1320		
120	1440		
130	1560		
140	1680		
150	1800		
160	1920		
170	2040		
180	2160		
190	2280		
200	2400		
210	2520		
220	2640		
230	2760		
240	2880		
250	3000		
260	3120		
270	3240		
280	3360		
290	3480		
300	3600		
310	3720		
320	3840		
330	3960		
340	4080		
350	4200		
360	4320		
370	4440		
380	4560		
390	4680		
400	4800		
410	4920		
420	5040		
430	5160		
440	5280		
450	5400		
460	5520		
470	5640		
480	5760		
490	5880		
500	6000		
510	6120		
520	6240		
530	6360		
540	6480		
550	6600		
560	6720		
570	6840		
580	6960		
590	7080		
600	7200		
610	7320		
620	7440		
630	7560		
640	7680		
650	7800		
660	7920		
670	8040		
680	8160		
690	8280		
700	8400		
710	8520		
720	8640		
730	8760		
740	8880		
750	9000		
760	9120		
770	9240		
780	9360		
790	9480		
800	9600		
810	9720		
820	9840		
830	9960		
840	10080		
850	10200		
860	10320		
870	10440		
880	10560		
890	10680		
900	10800		
910	10920		
920	11040		
930	11160		
940	11280		
950	11400		
960	11520		
970	11640		
980	11760		
990	11880		
1000	12000		
1010	12120		
1020	12240		
1030	12360		
1040	12480		
1050	12600		
1060	12720		
1070	12840		
1080	12960		
1090	13080		
1100	13200		
1110	13320		
1120	13440		
1130	13560		
1140	13680		
1150	13800		
1160	13920		
1170	14040		
1180	14160		
1190	14280		
1200	14400		
1210	14520		
1220	14640		
1230	14760		
1240	14880		
1250	15000		
1260	15120		
1270	15240		
1280	15360		
1290	15480		
1300	15600		
1310	15720		
1320	15840		
1330	15960		
1340	16080		
1350	16200		
1360	16320		
1370	16440		
1380	16560		
1390	16680		
1400	16800		
1410	16920		
1420	17040		
1430	17160		
1440	17280		
1450	17400		
1460	17520		
1470	17640		
1480	17760		
1490	17880		
1500	18000		
1510	18120		
1520	18240		
1530	18360		
1540	18480		
1550	18600		
1560	18720		
1570	18840		
1580	18960		
1590	19080		
1600	19200		
1610	19320		
1620	19440		
1630	19560		
1640	19680		
1650	19800		
1660	19920		
1670	20040		
1680	20160		
1690	20280		
1700	20400		
1710	20520		
1720	20640		
1730	20760		
1740	20880		
1750	21000		
1760	21120		
1770	21240		
1780	21360		
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1830	21960		
1840	22080		
1850	22200		
1860	22320		
1870	22440		
1880	22560		
1890	22680		
1900	22800		
1910	22920		
1920	23040		
1930	23160		
1940	23280		
1950	23400		
1960	23520		
1970	23640		
1980	23760		
1990	23880		
2000	24000		
2010	24120		
2020	24240		
2030	24360		
2040	24480		
2050	24600		
2060	24720		
2070	24840		
2080	24960		
2090	25080		
2100	25200		
2110	25320		
2120	25440		
2130	25560		
2140	25680		
2150	25800		
2160	25920		
2170	26040		
2180	26160		
2190	26280		
2200	26400		
2210	26520		
2220	26640		
2230	26760		
2240	26880		
2250	27000		
2260	27120		
2270	27240		
2280	27360		
2290	27480		
2300	27600		
2310	27720		
2320	27840		
2330	27960		
2340	28080		
2350	28200		
2360	28320		
2370	28440		
2380	28560		
2390	28680		
2400	28800		
2410	28920		
2420	29040		
2430	29160		
2440	29280		
2450	29400		
2460	29520		
2470	29640		
2480	29760		
2490	29880		
2500	30000		
2510	30120		
2520	30240		
2530	30360		
2540	30480		
2550	30600		
2560	30720		
2570	30840		
2580	30960		
2590	31080		
2600	31200		
2610	31320		
2620	31440		
2630	31560		
2640	31680		
2650	31800		
2660	31920		
2670	32040		
2680	32160		
2690	32280		
2700	32400		
2710	32520		
2720	32640		
2730	32760		
2740	32880		
2750	33000		
2760	33120		
2770	33240		
2780	33360		
2790	33480		
2800	33600		
2810	33720		
2820	33840		
2830	33960		
2840	34080		
2850	34200		
2860	34320		
2870	34440		
2880	34560		
2890	34680		
2900	34800		
2910	34920		
2920	35040		
2930	35160		
2940	35280		
2950	35400		
2960	35520		
2970	35640		
2980	35760		
2990	35880		
3000	36000		
3010	36120		
3020	36240		
3030	36360		
3040	36480		
3050	36600		
3060	36720		
3070	36840		
3080	36960		
3090	37080		
3100	37200		
3110	37320		
3120	37440		
3130	37560		
3140	37680		
3150	37800		
3160	37920		
3170	38040		
3180	38160		
3190	38280		
3200	38400		
3210	38520		
3220	38640		
3230	38760		
3240	38880		
3250	39000		
3260	39120		
3270	39240		
3280	39360		
3290	39480		
3300	39600		
3310	39720		
3320	39840		
3330	39960		
3340	40080		
3350	40200		
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3470	41640		
3480	41760		
3490	41880		
3500	42000		
3510	42120		
3520	42240		
3530	42360		
3540	42480		
3550	42600		
3560	42720		
3570	42840		
3580	42960		
3590	43080		
3600	43200		
3610	43320		
3620	43440		
3630	43560		
3640	43680		
3650	43800		
3660	43920		
3670	44040		
3680	44160		
3690	44280		
3700	44400		
3710	44520		
3720	44640		
3730	44760		
3740	44880		
3750	45000		
3760	45120		
3770	45240		
3780	45360		
3790	45480		
3800	45600		
3810	45720		
3820	45840		
3830	45960		
3840	46080		
3850	46200		
3860	46320		
3870	46440		
3880	46560		
3890	46680		
3900	46800		
3910	46920		
3920	47040		
3930	47160		
3940	47280		
3950	47400		
3960	47520		
3970	47640		
3980	47760		
3990	47880		
4000	48000		
4010	48120		
4020	48240		
4030	48360		
4040	48480		
4050	48600		
4060	48720		
4070	48840		
4080	48960		
4090	49080		
4100	49200		
4110	49320		
4120			



Request for Return



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

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121 Hartwell Ave
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Fax: +1 781 8609252

Europe and Middle East

Varian SpA
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10040 Leini (TO) – ITALY
Phone: +39 011 9979111
Fax: +39 011 9979330

Asia and ROW

Varian Vacuum Technologies
Local Office

CUSTOMER INFORMATION

Company name:	
Contact person: Name:	Tel:
Fax:	E-Mail:
Ship Method:	Shipping Collect #: P.O.#:
<u>Europe only:</u> VAT reg. Number:	<u>USA only:</u> ☐ 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 #:

FAILURE REPORT

TURBO PUMPS and TURBOCONTROLLERS

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

ION PUMPS/CONTROLLERS

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

VALVES/COMPONENTS

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

LEAK DETECTORS

☐ Cannot calibrate ☐ Vacuum system unstable ☐ Failed to start	☐ No zero/high background ☐ Cannot reach test mode ☐ Other
Customer application:	

INSTRUMENTS

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

PRIMARY PUMPS

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

DIFFUSION PUMPS

☐ Heater failure ☐ Doesn't reach vacuum ☐ Vacuum leak	☐ Electrical problem ☐ Cooling coil damage ☐ 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 Anfrage ist diese Unterlage auch auf Deutsch, Italienisch und Französisch erhältlich.

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From Benelux Fax: (31) 118 67 15 69

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Central coordination through: Varian Vacuum Technologies

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Vacuum Technologies

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Fax: (82) 2 3452 2451
Toll Free: 080 222 2452

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Varian, S. de R.L. de C.V.

Concepcion Beistegui No 109
Col Del Valle
C.P. 03100
Mexico, D.F.
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Fax: (52) 5 523 9472

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Varian Technologies Asia Ltd.

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Other Countries

Varian Inc.

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Fax: (39) 011 997 9 350

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