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Micro-GC
Power Supply

User Manual

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Varian Analytical Instrument Warranty

Hardware Products

All analytical instruments sold by Varian are warranted to be free from defects in material and workmanship for the periods specified and in accordance with the terms on the face of Varian's quotation or as otherwise agreed upon in writing between Varian and the Customer. The warranty period begins on the date of **shipment** from Varian to the original Customer. However, where installation is paid for by the Customer or included in the purchase price, the warranty period begins upon completion of installation. If the Customer schedules installation to start later than 30 days after delivery or if such delay is caused through the Customer's inability to provide adequate facilities or utilities or through failure to comply with Varian's reasonable pre-installation instructions or through other omissions by Customer, then the warranty period starts on the 31st day from date of shipment. Moreover Varian will charge the Customer for labor and other expenses involved in making multiple or follow-up installation service calls.

Software Products

Where software is provided within the frame of a license agreement concluded between the Customer and Varian, any warranty shall be strictly in accordance with the terms of such agreement.
In the absence of a license agreement and unless an alternate warranty period is agreed upon in writing between Varian and the Customer, the warranty period is as specified on the face of Varian's quotation. Varian warrants such software products, if used with and properly installed on Varian hardware or other hardware as specified by Varian to perform as described in the accompanying Operator's Manual and to be substantially free of those defects which cause failure to execute respective programming instructions; however, Varian does not warrant uninterrupted or error-free operation.

Remedies

The sole and exclusive remedy under hardware warranty shall be **repair** of instrument malfunctions which in Varian's opinion are due or traceable to defects in original materials or workmanship or, at Varian's option, **replacement** of the respective defective parts, provided that Varian may as an alternative elect to **refund** an equitable portion of the purchase price of the instrument or accessory.
Repair or replacement under warranty does not extend the original warranty period.
Repair or replacement under warranty claims shall be made in Varian's sole discretion either by sending a Customer Support Representative to the site or by authorizing the Customer to return the defective accessory or instrument to Varian or to send it to a designated service facility. The Customer shall be responsible for loss or damage in transit and shall prepay shipping cost. Varian will return the accessory or instrument to the Customer prepaid and insured. Claims for loss or damage in transit shall be filed by the Customer. To correct software operation anomalies, Varian will issue software revisions where such revisions exist and where, in Varian's opinion, this is the most efficient remedy.

Limitation of Warranty

This **warranty does not cover** software supplied by the Customer, equipment and software warranted by another manufacturer or replacement of expendable items and those of limited life, such as but not limited to: Filters, glassware, instrument status lamps, source lamps, septa, columns, fuses, chart paper and ink, nebulizers, flow cells, pistons, seals, fittings, valves, burners, sample tubes, probe inserts, print heads, glass lined tubing, pipe and tube fittings, variable temperature dewars, transfer lines, flexible discs, magnetic tape cassettes, electron multipliers, filaments, vacuum gaskets, seats and all parts exposed to samples and mobile phases.
This **warranty shall be void** in the event of accident, abuse, alteration, misuse, neglect, breakage, improper operation or maintenance, unauthorized or improper modifications or tampering, use in an unsuitable physical environment, use with a marginal Power Supply or use with other inadequate facilities or utilities. Reasonable care must be used to avoid hazards.
This warranty is expressly in lieu of and excludes all other express or implied warranties, including but not limited to warranties of merchantability and of fitness for particular purpose, use or application, and all other obligations or liabilities on the part of Varian, unless such other warranties, obligations or liabilities are expressly agreed to in writing by Varian.

Limitation of Remedies and Liability

The remedies provided herein are the sole and exclusive remedies of the Customer. In no case will Varian be liable for incidental or consequential damages, loss of use, loss of production or any other loss incurred.

Spare Parts Availability

It is the policy of Varian to provide operational spare parts for any instrument and major accessory for a period of seven (7) years after shipment of the final production run of that instrument. Spare parts will be available after this seven (7) year period but on an *as available* basis. Operational spare parts are defined as those individual electrical or mechanical parts that are susceptible to failure during their normal operation. Examples include relays, lamps, temperature probes, detector elements, motors, etc. Sheet metal parts, structural members or assemblies and castings, printed circuit boards, and functional modules are normally capable of being rebuilt to like-new condition throughout their useful life and therefore will be supplied only on an *as available* basis after the final production run of the instrument.

Service Availability

Varian provides a variety of services to support its customers after warranty expiration. Repair service can be provided by attractively priced service contracts or on a time and material basis. Technical support and training can be provided by qualified personnel on both a contractual or as-needed basis.

Varian Analytical Instruments Sales Offices

For Sales or Service assistance and to order Parts and Supplies, contact your local Varian office.

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VARIAN

http://www.varianinc.com/

CONTENTS

Safety Information

Information

In accordance with Varian's commitment to customer service and safety, this instrument and its accompanying documentation complies with the Safety, UL1950, CSA C22.2, IEC950 and EN60950. EMC standards, CISPR22-B, EN 55022-B, FCC-B. Documentation (NEN 5509) and CE.

To prevent any injury to the user or any damage to the instrument it is essential that you read the information in this chapter.

If this manual is not in your nature language and if you have problems understanding the text, we advise you to contact your Varian office for assistance. Varian cannot accept responsibility for any damage or injury caused by misunderstanding of the information in this manual.

Operating Instructions

This instruction manual is provided to help you establish operating conditions, which will permit safe and efficient use of your equipment.

Special considerations and precautions are also described in the manual, which appear in the form of **NOTES**, **CAUTIONS**, and **WARNINGS** as described below (next page).

It is important that you operate your equipment in accordance with this instruction manual and any additional information, which may be provided by Varian. Address any questions regarding the safe and proper use of your equipment to your local Varian office.

Information to aid you in obtaining optimal performance from your instrument.

Alerts you to situations that may cause moderate injury and/or equipment damage, and how to avoid these situations.

Alerts you to potentially hazardous situations that could result in serious injury, and how to avoid these situations.

Warning Symbol		***Warning Description***
	**WARNING: Shock hazard**	Indicates dangerous voltage: (terminals fed from the interior by voltage exceeding 1000V must be so marked).
	**WARNING: Burn hazard**	Indicates parts that may cause burns when touched
	**Instruction Manual**	Indicates that the user should refer to the manual before operating the equipment.
	**Protective Conductor terminal**	For protection against electrical shock in case of a fault. Used with field wiring terminals to indicate the terminal, which must be connected to ground before operating equipment.
	**Radioactive hazard**	Indicates that the instrument contains radioactive components, which may cause personal injury when handled incorrectly.
	**Skin puncture**	Indicates sharp or suddenly moving parts such as injection needles that may cause injury.
	**Static discharge Warning**	Indicates instrument contains parts that can be damaged by electrostatic discharge. Take care for proper grounding before handling.
	**Do not touch**	Touching this item may result in damage to the instrument or personal injury.

General Safety Precautions

NOTICE: This instrument has been tested per applicable requirements of EMC Directive as required to carry the European Union CE Mark. As such, this equipment may be susceptible to radiation/interference levels or frequencies, which are not within the tested limits.

This instrument is designed for use in combination with the Micro-GC. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

It is the responsibility of the Customer to inform Varian Customer Support Representatives if this Power Supply has been used in combination with the Micro-GC for the analysis of hazardous biological, radioactive, or toxic samples, prior to any instrument service being performed or when an instrument is being returned to the Service Center for repair.

Cautions

1. Disconnect the instrument from all power sources before removing protective panels to avoid exposure to potentially dangerous voltages.
2. When it is necessary to use a non-original power cord plug, make sure the replacement cord adheres to the color-coding and polarity described in the manual and all local building safety codes.
3. Replace faulty or frayed power cords immediately with the same type and rating.
4. This Power Supply should be placed in a suitable location with sufficient ventilation to remove gases and vapors. Space around the Power Supply must be sufficient to enable cooling of the Power Supply.
5. Do not turn on the Power Supply if there is a possibility of any kind of electrical damage. Instead, disconnect the power cord and contact your Varian office.
6. The supplied power cord must be inserted into a power outlet with a protective earth ground connection. When using an extension cord, make sure that the cord is also properly grounded.
7. Do not change the external or internal grounding connections as this could endanger you and/or damage the Power Supply.
8. The Power Supply is properly grounded when shipped. You do not need to make any changes to the electrical connections or to the Power Supply chassis to ensure safe operation.

9. Do not place containers with flammable liquids on this Power Supply. Spillage of the liquid over hot parts may cause fire.
10. Never try to repair or replace any component that is not described in this manual without the assistance of a Varian service engineer. Unauthorized repairs or modifications will result in rejection of warranty claims.
11. Always disconnect the AC power cord before attempting any type of maintenance.
12. Use proper tools when working on the Power Supply to prevent danger for you and/or damage to the Power Supply.
13. The customer should not attempt to replace the fuses in this Power Supply.
14. Damage can result if the Power Supply is stored under unfavorable conditions for prolonged periods (e.g., subject to heat, water, etc.).
15. This unit has been designed and tested in accordance with recognized safety standards and designed for use indoors.
16. If the Power Supply is used in a manner not specified by the manufacturer, the protection provided by the Power Supply may be impaired.
17. Substituting parts or performing any unauthorized modification to the Power Supply may result in a safety hazard.

INTRODUCTION AND INITIAL OPERATION

Introduction

Congratulations and thank you for purchasing the Varian, Inc. Micro-GC Power Supply used in combination with the Micro-GC.
This Power Supply must ***only*** be used in combination with the Micro-GC model.
This Power Supply is tailored to meet the power needs of the Micro-GC model.

NOTE

For problems or questions about your Micro-GC Power Supply, please contact your nearest Varian, Inc. subsidiary or Varian, Inc. representative.

Unpacking

Check the packing list to see if you have received all that you require.

Packing list

Power Supply

Including:

Power Supply 110V CP49PWR110
or
Power Supply 220V CP49PWR220
or
Power Supply 240V CP49PWR240

Power Supply input 80 Vac to 130 Vac or 180 Vac to 260 Vac (autoranging) 47 to 63 Hz 130W output 12.0 Vdc

Mains cable with plug 220 Vac
or
Mains cable with plug 110 Vac
or
Mains cable with plug 240 Vac

Pre-installation requirements

In order to assure a quick, safe and uncomplicated installation, we kindly request you to make provisions as stated below before our Varian, Inc. service engineer install(s) your instrument(s). See also Micro-GC pre-installation requirements document CP501289.

Environmental requirements

- Pollution degree: 2
- Humidity: 5% to 95% RH
- Temperature: 5 ° to 40 °C operating, -20 ° to 65 °C non-operating
- The Micro-GC Power Supply should be protected from corrosive chemicals or gases, dust/particulate accumulation, and direct venting of air conditioners, heaters, furnaces or fans.

Space requirements

- Allow sufficient bench space to permit installation of workstations, integrators and other Micro-GC equipment. The table below lists the physical dimensions and weight of the Micro-GC Power Supply and the peripheral instruments which may be installed near it.
- Allow 10-20 cm of space at the sides and rear of the Micro-GC Power Supply to permit free air circulation.

	Height		***Width***		***Depth***		***Weight***	
Instrument	Inch.	Cm	Inch.	Cm	Inch.	Cm	Lb.	Kg
Micro-GC 2-CH	11	28	6.5	16	12	30	14	6
Micro-GC 4-CH	11	28	6.5	16	21.5	55	22	10
Power Supply	***2.5***	***6.4***	***4***	***9.5***	***7***	***17.8***	***2***	***1***
Field case 2-CH	15	38	12	30	16	41	35	16
Field case 4-CH (with trolley)	18.5	47	15	38	28.5	73	68	30
Chromatography Workstation (computer with monitor, approximate values)	17	43	17	43	21	53	35	16

Power source

- Mains voltage of 90 till 260 Vac, frequency between 50-60 Hz.
- The mains group, supplying the mains socket(s), must be exclusively reserved for the instrument(s).
- The mains network should be properly grounded.
- Installation Category (overvoltage category): II

Power

The Micro-GC requires 12V Vdc, 130 W. For more details refer to the User manual Micro-GC (CP501265).

Setting up the Power Supply

1. Check if the Power Supply is corresponding with the Micro-GC (see table below).

Micro-GC	*Mains voltage*	*Power Supply and Cables*
Check power connector 	230 VAC	Power Supply CP740159 With mains cable CP72103
	240 VAC (UK)	Power Supply CP740159 With mains cable CP71735 (UK plug)
	110 VAC	Power Supply CP740159 With mains cable CP177128

2. Connect the Power Supply to the Micro-GC.
3. Connect the mains cable to the Power Supply.
4. Connect the mains plug to the main voltage.
5. The Power Supply is now ready for use.

Cleaning instructions

To keep the Power Supply surface clean, refer to the remarks given below:

- Switch the Micro-GC off.
- Remove the power cable from the mains.
- Use a soft (no hard or abrasive) brush to carefully brush away all dust and dirt.
- If the outer case is dirty (never clean the inside!) clean it with a soft, clean cloth dampened with mild detergent.
- Never use alcohol or thinners to clean the Power Supply, these chemicals can damage the case.
- Be careful not to get water on the electronics components.
- Do not use compressed air to clean.

Disposal instructions

Disposal of the Power Supply must be carried out in accordance with all (environmental) regulations applicable in your country.

Specifications Power Supply

Feature	*Specifications*
Input voltage	90 Vac to 130 Vac or 180 Vac to 260 Vac (autoranging)
Input frequency	47-63 Hz
Inrush current	Cold start, 15A/115V, 30A/230V
Output voltage	12.0 Vdc
Voltage adjust	± 3%
Output power	130W
Over voltage protection	112%-132% of its nominal output voltage
Ripple and noise	1 % p-p max
Operating temperature	0 °C to +60 °C
Storage temperature	-40 °C to +50 °C
Humidity	5% to 95% non condensing
Safety standard	UL 1950, CSA C22.2 no 234, IEC950, EN60950, TUV file No. S9954867 Approved
RFI/EMC standard	In compliance with CISPR22 (EN55022), Class B and FCC class B
Dimensions	178 x 95 x 63.5 mm (LxWxH)
Weight	1 kg approx.