Plasmion
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Short Manual

Heating Controller

for SICRIT® GC Transferline

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This manual has to be to be stored carefully and must be at hand to any user of the described system.

	Attention! Please read and understand this manual before operating the described system. In case you discover obvious errors or contradictions for your product, contact support@plasmion.de before operating the system.

The content of this document has been checked thoroughly and is believed to be reliable. However, Plasmion GmbH does not assume any responsibility for damages of foreign or own products and instruments resulting from improper use or any combination of the product with other instruments.

The Heating Controller is originally manufactured by Pohltechnic.com GbR, Essingen, Germany (http://www.pohltechnic.com) under the product brand A-senco TR-85. This is supplied from Plasmion in combination with its SICRIT® GC transferlines. Plasmion GmbH is not liable for consecutive damages resulting from integration and/or operation of its products in/with other systems. If the system is used in any manner not specified by Plasmion GmbH, the protection of the system could be impaired. Plasmion GmbH is not responsible for ignoring the outlined safety guidelines or the misuse of this system.

Safety Instructions

The following safety labels on the product and within this manual indicate safety risks and necessary precautions that arise during installation or from operating the products.

	[Attention!], marks possible dangers to your safety and health.
	[Dangerous Voltage!], indicates parts and situations where there is the risk of exposure to dangerous electrical voltages.
	[Attention Hot Surface!], indicates potentially hot surfaces that might cause burning injuries if touched without protective gear.
	[Note], marks important information or advice, not related to safety issues.

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1 Intended Use of the Heating Controller

The system described is intended for use only in laboratory and/or R&D environment. The controller is originally manufactured by Pohltechnic GbR and is supplied by Plasmion only in combination with its GC transferlines. Therefore, the heating controller is fix assembled with the transfer line. If the system is used in a way not specified, misused or modified causing an infringement of the safety measures, Plasmion GmbH refuses any liability for consecutive damages in any form.

The heating controller is only intended for heating the GC transferline in order to perform GC-SICRIT-MS measurements. Therefore, the controller is pre-configured by Plasmion to heat the connected transfer line up to 350 °C. Temperature control is configured using PID control cycle and PID parameters are tuned ex works for the delivered transfer line using the implemented PID auto-tuning function.

	Attention! Do not open the cover of the housing, there are no serviceable parts inside.

2 Technical Data

Heating Controller HC__

Dimensions	180 x 920 x 70 mm
Weight	1.0 kg
Supply Voltage	100-250 VAC 50-60 Hz
Power Plug	type depending on customer region
Fuse	400 mA F
Output	100-240 VAC 50-60 Hz Max. 10 A ohmic load
Adjustable Temperature Range	0 – 350 °C
Operation Temperature	5 °C to 40 °C
Storage Temperature	20 °C to 100 °C
Operation Humidity	< 80% RH (non condensating)

3 Installation and Use of the Heating Controller

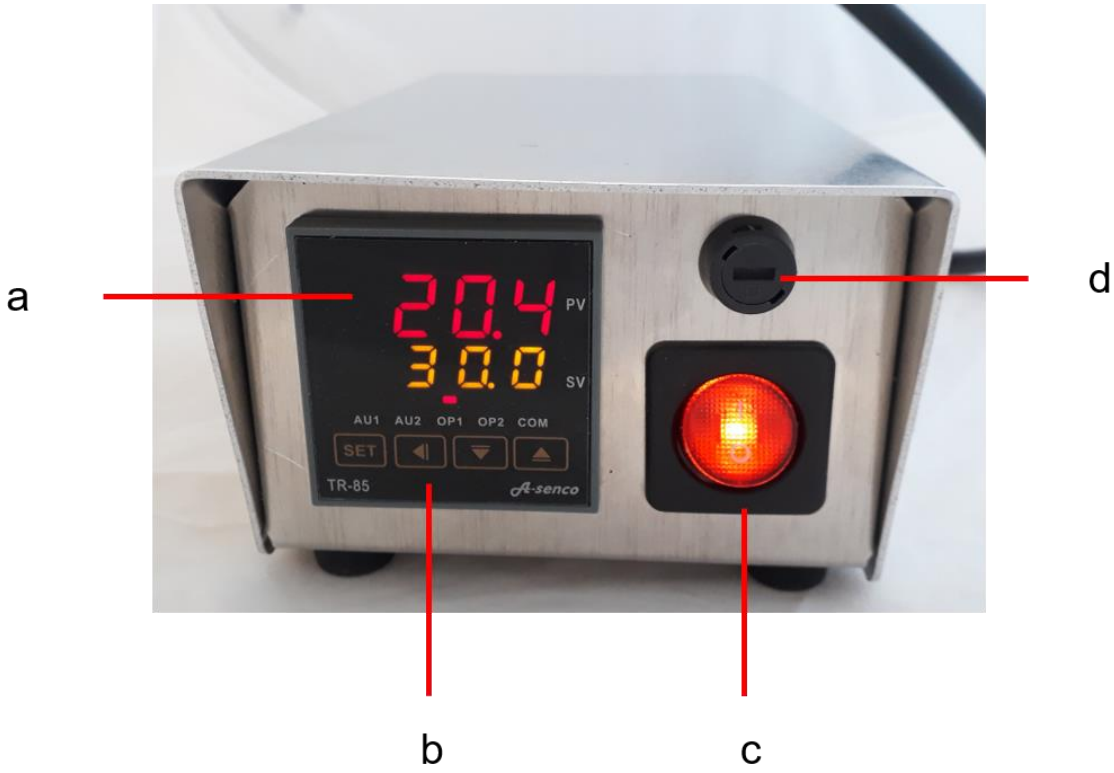

Figure 1: Front of the Heating Controller

a) Display with actual temperature value in red (PV) and set value in orange (SV), red LED (OP1) on, when controller is active

b) Touch keys for temperature settings (cursor, down, up) and value confirmation (SET)

c) Power switch (ON/OFF)

d) Fuse 5x20 mm, 400 mA F

Attention!

Do not use the device in a potentially explosive atmosphere or in the vicinity of flammable liquids or gases.

3.1 Setting up the Heating controller

Before using, check the device for visible damages. Place it on a firm surface and ensure sufficient air circulation. Do not use the device as base for other devices! Connect the unit to the power grid. Operate the device only on a grounded plug socket with at minimum 16 A protection (100-240 V, 50-60 Hz). Turn on the system by pressing the integrated main power switch (Fig. 2c).

3.2 Operation of the Heating controller

As the controller is pre-configured by Plasmion, the only routine user operation is to set the temperature to the desired value of the SICRIT® GC transferline.

Adjustment can be done by the up/down touch keys of the front panel and confirmation by pressing the SET button. The maximum set value is 350 °C.

The heating controller can indicate deviations of the actual temperature from the selected set value. These values are set to 50° C above set value and 25° C below set value. The respective display messages are ESAL (actual temperature > 50 °C above set value), and EIAL (actual temperature > 25 °C below set value). Thus, during heating of the transfer line from room temperature to operation temperature, the display will show the EIAL message (red blinking).

	Attention! Do not use the device in a potentially explosive atmosphere or in the vicinity of flammable liquids or gases.
	Attention! Parts of the GC transfer line get hot during heating! Turn on the heating controller only after correct installation of the GC transfer line as described in the respective installation manual.

4 Troubleshooting

4.1 Display shows “LLLL” or “HHHH” message

The GC transfer line is equipped with a thermoelement for actual temperature readout. The “LLLL” or “HHHH” messages would indicate wrong thermal sensor or a broken cable connection to the sensor. The output of the controller will be disabled. In case of this error, please get in contact with your vendor for further support.

4.2 Display shows “LOC” message

The delivered heating controller can be configured for different thermoelement and heating setups. The display message “LOC” appears after (unintended) pressing the “SET” button for >3 seconds and allows for unlocking the configuration settings menu. As these settings are adjusted to operate the assembled GC transfer line, there’s no need to do any changes by the user. The message disappears after several seconds and set / actual temperature values are shown in the display again.

5 Controller Parameters for Operation of SICRIT® GC Transferline (only trained personnel)

To check or modify the configuration of the heating controller, the setting can be opened by unlocking the configuration settings menu. Therefore, press the SET button > 3 seconds, until "LOC" is displayed instead of the actual temperature value. Typing the number code "808" with the up and down keys opens the configuration settings menu. Settings can be adjusting using the cursor keys and confirmed by pressing the SET button.

In Table 1 the settings for operating GC transferlines are depicted.

Table 1: Parameter and settings of Heating Controller for Operation of SICRIT® GC Transferline

Parameter code	Recommended Setting	Description
uPAL	350	Max. operation temperature
LoAL	0	Min. operation temperature
ESAL	50	Deviation High Alarm. Temperature deviation (T_{ACT}-T_{aETt}) above the alarm value leads to ESAL message in the display
ESAL	50	Deviation High Alarm. Temperature deviation (T_{ACT}-T_{SETt}) above the alarm value leads to ESAL message in the display
EIAL	25	Deviation Low Alarm. Temperature deviation (T_{SET}-T_{ACT}) above the alarm value leads to EIAL message in the display
HYS	0	Hysterese for ON/OFF-Heating (Not applicable for PID loop)
Ctrl	3	Mode of Control Cycle Time 3 = PID with locked autotuning 2 = PID with activated autotuning (AT) 0 = ON/OF-Heating (not recommended)
P	AT value	Parameter optimized by autotuning, depending from thermal load (Don't change manually!)
i	AT value	Parameter optimized by autotuning, depending from thermal load (Don't change manually!)
d	AT value	Parameter optimized by autotuning, depending from thermal load (Don't change manually!)
Ctl	1	Operation frequency 1 = highest frequency (highest precision)

InP	0	Temperature Sensor Type 0 = K Type thermoelement
dPt	0	Temperature Display 0 = without decimal place 1 = one decimal place
ScL/ScH	0	Not applicable (Can be ignored)
Scb	0	Calibration set value (= Temperature Off-set)
oPt	0	Output configuration, factory setting (Don't change!)
oPL	0	Output Low Level in %
oPH	100	Output High Level in % (max. 110%)
AoP	0000	Alarm Output Position (not active)
AF	0	Action Formula, defines operation mode 0 = Heating mode (Don't change!)
Addr/bAud	----	Not active
FiLt	1	Readout frequency of thermal sensor 1 = highest frequency
run	----	Not active
Loc	0 or 1	Locking mode 0 = adjustment of set value allowed, adjustment of specified parameters allowed (EP1-EP8) 1 = adjustment of set value allowed 2 = adjustment of set value NOT allowed 808 = Unlocking of parameter configuration menu
EP	none	Defined parameters, which can be adjusted by the user after pressing SET button >3 s, if LOC is set to 0