
Covesion Ltd

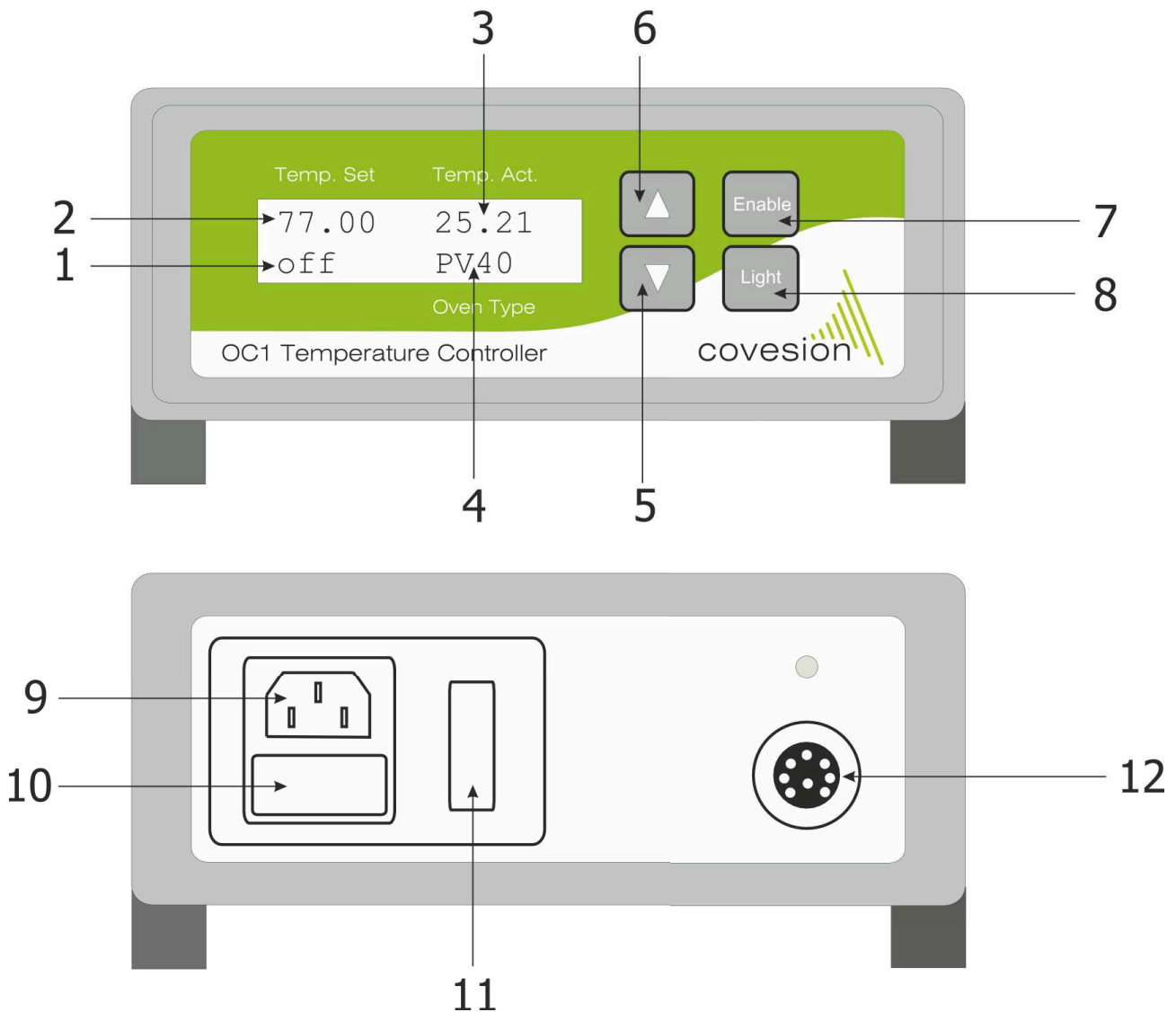
OC1 Temperature Controller

Operating Manual v1.1a



Covesion's OC1 temperature controller provides stable temperature conditions for PPLN crystals when used in conjunction with a Covesion oven (e.g. PV oven series). The unit can tune from a 5°C above ambient temperature up to 200°C and provides a temperature stability of 0.01°C.

The OC1 temperature controller is suitable for Covesion ovens only. When an oven is connected to the OC1 output, the unit immediately identifies the oven type which is indicated on the LCD display.



- 1. Controller output state (on/off)
- 2. Set temperature (°C)
- 3. Oven temperature (°C)
- 4. Oven type
- 5. Decrease set temperature
- 6. Increase set temperature (on/off)

- 7. Enable oven heater
- 8. LCD backlight
- 9. AC power socket (120V or 240V)
- 10. Fuse (250V)
- 11. AC power switch
- 12. Controller output (oven connection)

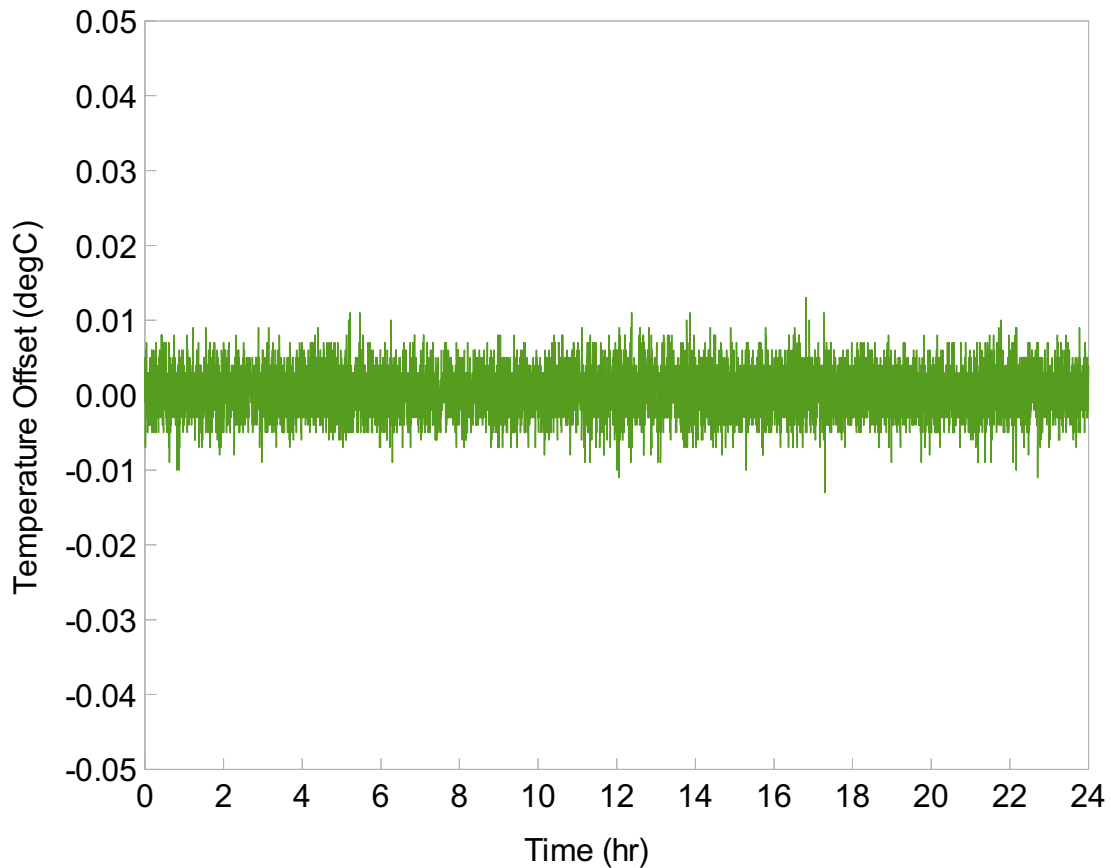
Specifications

Parameter	Min	Typ	Max	Unit
Input voltage	100		250	VAC
Output power			35	WDC
Output voltage			24	VDC
Temperature control range ¹	15		200	°C
Set-point resolution	0.01			°C
Absolute temperature accuracy ²		+/-0.1		°C
Temperature stability (24 hour) ³		+/-0.01		°C
Heating time from ambient to 200°C		7		minutes
Cooling time from 200°C to 60°C ⁴		20		minutes
Cooling time from 60°C to 30°C ⁴		20		minutes
Operating temperature (external)	10		50	°C
External Dimensions (L x W x H)		199 x158 x74		mm

1. Conversion oven types are suitable for heating only. The external oven temperature must be lower than the set-point temperature.
2. Does not account for sensor tolerances.
3. From 5°C above ambient temperature to 200°C
4. Room temperature at 25°C.

OC1 operation

- Ensure that the power switch at the back of the unit is in the OFF position. Connect the mains power lead to the unit and then plug it into the AC mains (100V to 250V universal input).
- Connect the oven lead to the OC1 oven connector output. Ensure the oven lead is securely screwed in place.
- Turn on the power switch at the back of the unit. The LCD screen will show a brief start up display before displaying the main operation screen. The "OVEN TYPE" should be correctly identified and displayed at the bottom right corner of the screen.
- The oven set temperature "TEMP SET" and actual operating temperature "TEMP ACTUAL" will be displayed on-screen. TEMP SET is adjusted using the up (▲) and down (▼) keypads. A single key press results in a 0.1°C increment. Holding down the key results in bigger increments from 0.1°C to 1°C, and finally to 10°C.
- Once the desired "TEMP SET" is reached, press the "ENABLE" keypad to turn on the oven. The word "ENABLED" will be displayed on-screen.
- The "TEMP ACT" display automatically shows the measured internal temperature of the oven. The oven temperature will oscillate around the set point before stability is reached. Stability is typically achieved within a few minutes of reaching the set temperature. Please note that the system is slower on cooling than heating, particularly when the set point is close to the ambient temperature.
- The backlight of the LCD display can be turned on or off using the "LIGHT" keypad.



Faults

In the event that “Fault” is displayed in the “TEMP ACTUAL” field the controller cannot be enabled. This indicates a temperature sensor error which can be caused by:

- no sensor or oven connected
- damaged sensor

If the “OVEN TYPE” field is empty the controller cannot be enabled. Failure to recognise an oven type when an oven lead is connected can be caused by:

- incompatible oven connected
- faulty oven connection