

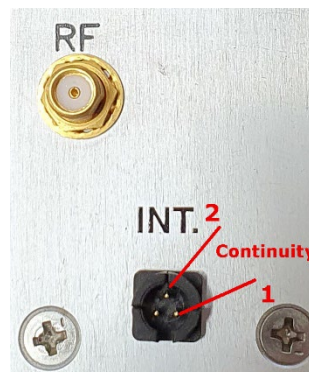
## AN0722

### Resetting the AO Thermal interlock switch.

Water cooled AO Devices and RF Drivers are often fitted with thermostatic interlock switches. These switch to open circuit when the threshold or trip temperature has been exceeded.

You can check if the thermal interlock is OK on the AO device (NOT the driver) by measuring continuity between pins 1 and 2 of the INT connector.

It should read ~zero ohms.



The majority of Isomet fused silica and quartz AO devices and high-power RF drivers are fitted with a 50degC switch. Refer to test data sheet.

However, for Germanium and some Quartz AO devices the typical over-temperature threshold is 32degC. The switching hysteresis is 7-10deg C. Therefore, it is necessary to reduce the coolant temperature to below 18degC to reset the thermal switches. (closed circuit)

In hot and humid climates, the thermal interlock may switch to open circuit because the unit has been stored or operated above 32degC.

If the recirculating chiller temperature cannot be reduced sufficiently to overcome the thermostatic switch hysteresis, it is possible to reset the switch using one of two methods:

#### 1: Freezer aerosol spray.

Carefully remove the AO cover. The switch is shown in the picture. The location will depend on the AO model. Apply freezer spray to the gold body of thermostatic switch.

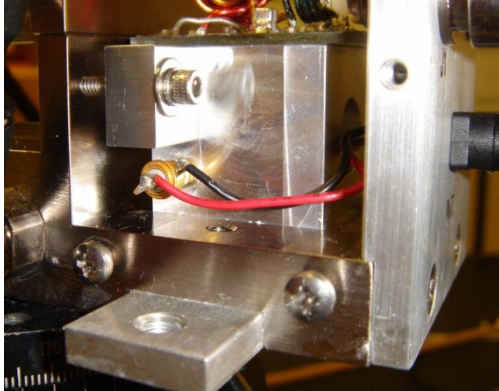
- DO NOT get freezer spray on the optic surfaces.

Some models have access hole in the cover. The switch is located immediately behind this hole.

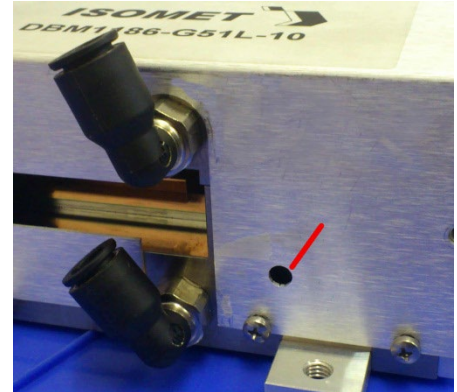
# Application Note



“Gold” thermostatic switch.  
(Shown here with red and black wires)



Cover access hole  
(Indicated by red line)



## 2: Cool in a domestic refrigerator

Place the AO device in a sealed plastic bag and then place in a domestic refrigerator for about one hour.

- DO NOT allow to freeze.
- DO NOT allow condensation to form
- Avoid thermal shocks.

## CAUTION

In all cases allow the AO device to return to room temperature before applying RF power.

When operating the AO device(s), please ensure that you have good coolant flow through the entire circuit and the coolant temperature is less than 23degC.

Primarily, coolant is required due to RF power dissipation in the AO device. It is NOT related to the applied optical power.