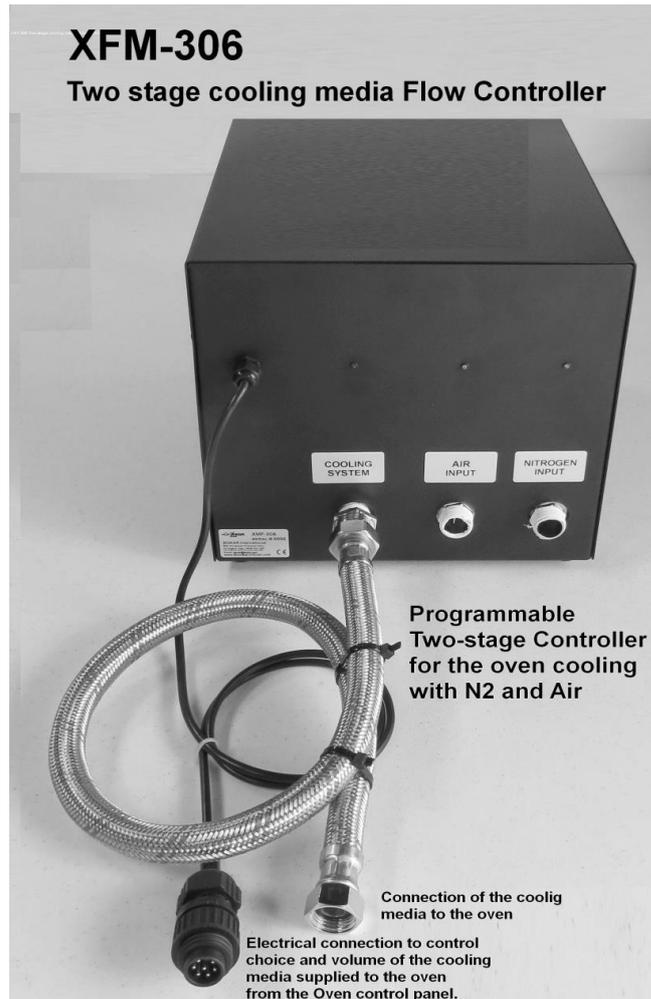


MANUAL

XMF-306 Cooling media mass flow controller for X-REFLOW306/S Scientific Batch Oven

The cooling media electronic mass flow controller is a unique addition to the X-Reflow scientific oven.



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Description

The cooling media mass flow controller is a propriatory Bokar unit developed to give the users of our Batch Convection Ovens an extraordinary tool to preset and control the rate of cooling the objects heated in the ovens.

It is a device which attaches to the Batch Oven and is controlled from the control panel of the Oven.

The operator (user) can preset the cooling media (Air, N2, or both) flow volume measured in l/min or SCFM to enter the oven after the end of the max heating zone to rapidly cool the hot object.

There are two inputs for the cooling media, one for N2 and one for Air.
 N2 is recommended for cooling PCB's after reflow to quickly solidify molten solder. The cooling controller to first supply N2 to solidify the solder. The cooling media can then be switched to shop air to reduce expenses.

The Cooling media mass flow controller will maintain constant flow in a preset time regardless of the variation of the pressure entering the controller. The constant flow is guaranteed over input pressure changes from 4 – 8 bars.

The mass flowmeter is guaranteed for 3 years and if used as intended does not require calibration.

However, it is recommended to send it to the manufacturer for a calibration check once every 3 years or so.

Flow controller operation is very simple. One needs to connect the controller to the oven using the 1'2" diameter pipe supplied with the unit and connect the cable connector of the multi-conductor wire to the back panel of the oven. Also, the cooling media 1/2" diameter lines need to be connected to the controller input ports.

If only one input is used the second can remain unconnected. Each port has a check valve preventing cooling media from exiting through the unused port.

All that the operator needs to do is to key in the cooling volumes when entering the heating/cooling profile via the Control Panel of the oven.

This feature is unique and as far as we know used only on our reflow ovens. Cooling rates obtained when using our controller are unmatched by anyone in the industry.

If the profile to control the temperature of the air in the oven is used there is only one cooling zone.

When setting the profile, the operator can set only one volume of mass flow of the air or N2 which is connected to the air input. (Note: The inputs are labeled N2, and Air but both gasses can be connected to the input of choice)

Some users who want faster cooling in the zone Cool1 use N2 connected to N2 input, and after initial cooling use Air (which is less expensive) in zone cool2.



XMF-306 TECHNICAL SPECIFICATIONS

Power Requirements	24V DC
COMMAND INPUT	1 -10V DC
ANALOG OUTPUT	1 -10V DC
CALIBRATED SUPPLY PRESSURE	0 TO 8 BAR GAUGE
CALIBRATED FLOW RANGE	0 TO 8 SCFM
AIR INPUT (port size)	1/2"
NITROGEN INPUT (port size)	1/2"
COOLING SYSTEM (Connection of the cooling media to the oven -port size)	1/2"
System dimension (without the air line)	L=12,6"xW=10"xH=9,5" (L=320mm x W=254mm x H=240mm)
Weight (unpacked)	19,9lbs. (9 kg)
Packaged weight and dimension	24,3lbs. (11 kg)