

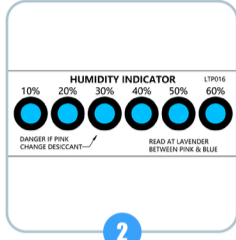
# R4 Series Product User Manual

One-Stop Solutions of Power Supplies

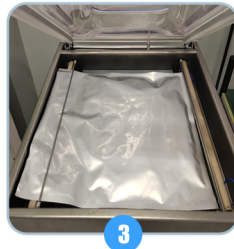
## Regulation for Moisture-Sensitivity



1 Check out if the package of the product is broken to avoid air leakage before use.



2 Open the product package and check if the color of the humidity indicator card is changed. Create a sheet to record the unpacking time.



3 Method 1: First, put the unused product into a new aluminum foil bag, add in new desiccants and humidity indicator card and then pack it in a vacuum. Finally, record the packing time.



4 Method 2: Put the unused product into a drying cabinet (25°C/5%RH) and record the time.

The time of packing or putting in the drying cabinet shall not be included in the floor life. Each use of the product should be recorded on the sheet, and the accumulated floor life shall be < 168 hours.

## Baking Standards for Overdue Product

The remaining product which has been exposed beyond the standard time should be baked before another use. The baking standards are shown below. Note that the floor life can be reset after baking, and the product can only be baked once. (Overdue product refers that the color of the humidity indicator 10% of the product is changed or its hangtime is over the standard.)

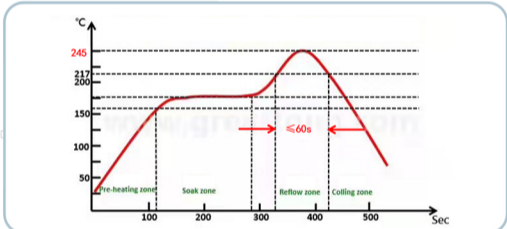
Product Thickness	Baking 125°C		Baking 90°C≤5%RH		Baking 40°C≤5%RH	
	Overdue is > 72h	Overdue is ≤ 72h	Overdue is > 72h	Overdue is ≤ 72h	Overdue is > 72h	Overdue is ≤ 72h
< 1.4mm	9h	7h	33h	23h	13d	13d
> 1.4mm ≤ 2.0mm	27h	17h	4d	2d	37d	23d
> 2.0mm ≤ 4.5mm	48h	48h	10d	8d	79d	67d

- Note:
- When the baking temperature is lower than 100°C, the humidity of the baking cabinet must be ≤5%. Bake the product according to the table above.
  - When the baking temperature is higher than 100°C, the reel of the product may be melt and can not be used for a second time.
  - When the humidity in the baking cabinet is >5%, more time is needed to ensure the moisture has been completely removed, which could be determined by the weight.
  - It is recommended to pack the product in a vacuum when use it in batches to avoid rebaking.

Moisture-Sensitivity Level (MSL)	Floor Life	
	Time	Environment
1	Without Limit	≤30°C/85%RH
2	1 Year	≤30°C/60%RH
2a	4 Weeks	≤30°C/60%RH
3	168 Hours	≤30°C/60%RH
4	72 Hours	≤30°C/60%RH
5	48 Hours	≤30°C/60%RH
5a	24 Hours	≤30°C/60%RH
6	It is essential to bake the product before use and weld it within the regulated time on the label of warning.	≤30°C/60%RH

## Reflow Soldering Curve

Reflow soldering without lead, Temperature: >217°C, Time: 60s  
Peak Temperature: 245°C. The furnace temperature curve is as below:



\* As different users have different reflow furnaces, the specific temperature range and parameters can be set and adjusted to meet your own requirements. Note that the measured furnace temperature should be in accordance with the curve above.

## Welding and Maintenance of the Heat Gun

- Syringe, steel meshes, and other auxiliary tools can be used to pave solder paste on the pad.
- Make sure that the solder paste is paved evenly on the solder joints.
- Set the air volume of the heat gun as 3-4, and the temperature as 4-5 (240°C-300°C).
- Place the R4 Generation Product in the designated position.
- Turn the handle of the heat gun with an angle of 45° to the solder joint and heat evenly to melt the solder paste on it.

Note: The product with moisture-sensitivity failure (hangtime is > 168h) should be baked before being disassembled.

Standard Operating Procedures (SOP)					
Document name	R4 Heat Gun Welding Operating Procedures	Document No		Ver	
Station	Welding	Scope	R4 Generation Product	Applied department	
Station code		Tooling & Equipment	QUICK990A Heat Gun Desoldering Table	Next station	PCB Cleaning
Process parameter:			Figure 1: QUICK990A Heat Gun Desoldering Table		
Air Volume: 3-4 Level			Temperature: 4-5 Level (240°C-300°C)		
Heating Time: 5±2s			Operation step:		
1. Power the device,			2. Press the power switch.		
3. Adjust the air volume and temperature by spinning the knob and wait for 5s till the temperature become stable, as shown in Figure 2.			Figure 2: QUICK990A Heat Gun		
Notice:			1. Anti-static wrist straps or gloves are necessary for operating.		
2. The staff cannot contact the nozzle and the air outlet to avoid being scalded.			3. Do not heat a single solder joint for a long time.		
4. Do not use the muzzle to contact the components.			5. Do not press the product hardily on the PCB to avoid the solder paste move to the pad on another side.		

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Station	Welding	Scope	R4 Generation Product	Applied department	
Station code		Tooling & Equipment	QUICK990A Heat Gun Desoldering Table	Next station	
Process parameter:			Figure 3: R4 Generation Product		
Air Volume: 3-4 Level			Temperature: 4-5 Level (240°C-300°C)		
Heating Time: 5±2s			Operation step:		
4. Place the R4 Generation Product in the designated position, as shown in Figure 3.			5. Turn the handle of the heat gun with an angle of 45° to the solder joint and heat evenly to melt the solder paste on it, as shown in Figure 4.		
6. Turn off the power and pull out the plug after 5 minutes of cooling.			Figure 4: Heat gun handle angle		

Standard Operating Procedures (SOP)					
Document name	R4 Heat Gun Welding Operating Procedures	Document No		Ver	
Station	Brushing Solder Paste	Scope	R4 Generation Product	Applied department	
Station code		Tooling & Equipment		Next station	Welding
Process parameter:			Figure 1: Solder paste application		
1. SAC305 Solder Paste			1. Syringe, steel meshes, and other auxiliary tools can be used to apply tin on the pad.		
Operation step:			2. Ensure that the solder paste is applied evenly on the solder joints, as shown in Figure 1.		
Notice:			1. It is not allowed to appear downward movement icicles, and other issues during solder paste printing.		
2. The amount of the solder paste should not be too much, or a short circuit would occur between the pads.			2. The amount of the solder paste should not be too much, or a short circuit would occur between the pads.		