



*Uniflow 4 standard version*



*Uniflow 4R remote version*

# Uniflow<sup>®</sup>4

## Hot Bar Soldering Control

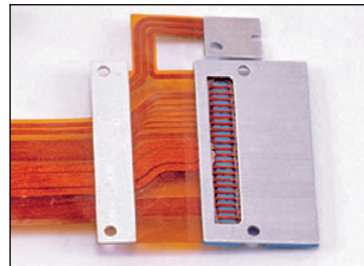
Uniflow4 provides targeted heating and precision temperature control for **hot bar soldering** applications such as the connection of flexible circuits, ribbon cables, wires, SMT components, single or dual sided edge connectors and thermocompression bonding of gold ribbon.

Uniflow4 is available as a standard reflow soldering unit with a built-in transformer, or as a remote unit (Uniflow4R) with a smaller control unit and separate remote transformer— an ideal option for many automation installations.

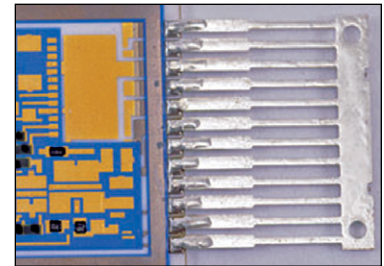
### KEY FEATURES

- Closed-loop temperature and time control
- Stores 63 heating profiles
- Remote programming via RS-232/485
- Two thermocouples for process control and auxiliary monitoring
- Comprehensive and informative user interface:
  - Graphic and numeric process data
  - Status and alarm messages
  - Heat profile settings and envelope limits
  - Temperature error indicators
  - User scalable time axis
  - Real time temperature plot

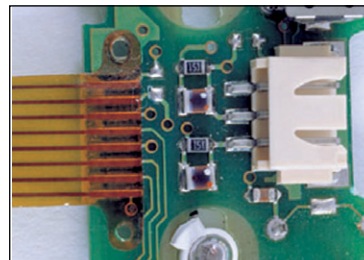
### TYPICAL APPLICATIONS



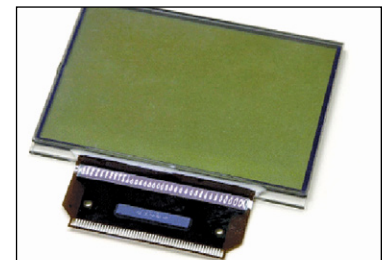
*Open-windowed flex attachment*



*Lead frame to substrate pads*



*Flex to PCB*



*Flex to LCD*

## TECHNICAL SPECIFICATIONS

Temperature profile specifications	
<b>Temperature range</b>	
Idle	25 to 300° C
Base heat	25 to 300° C
Preheat	60 to 500° C
Heat	60 to 600° C
Heat extended range	60 to 999° C
Postheat	25 to 999° C
<b>Time periods</b> (in 0.1 sec. increments)	
Base heat	0 to 99.9 seconds
Rise to preheat time	0 to 9.9 seconds
Preheat	0 to 99.9 seconds
Rise to heat time	0 to 9.9 seconds
Heat	0.1 to 99.9 seconds
Postheat	0 to 99.9 seconds
<b>Temperature Control</b>	
Accuracy	±2% of reading or ±6° C, whichever is greater
Repeatability	±1% of reading
<b>Thermocouple input</b>	Type E, J or K
<b>Heating rate control</b>	Three integrated user-set parameters optimize temperature profile
<b>Programmable heat profiles</b>	Sixty three (63) non-volatile memory

Optional Equipment Ordering Guide		
Suggested basic system: power supply, reflow head, thermode, footswitch, auxiliary thermocouple		
<b>Reflow heads</b>	Force range lbs (Newtons)	Application guideline
50F/LRF	0.08 to 2.2 (.4 to 9.8)	Light force pinpoint soldering
50F/RF	0.275 to 2.2 (1.22 to 9.8)	Light force pinpoint soldering
87A/EZ	0.5 to 20 (2.2 to 89)	Small/medium soldering
87F	0.25 to 20 (1.1 to 89)	Small/medium soldering
87SA/24	2 to 20 (8.9 to 88.9)	Flex soldering/bonding
SH80	1.8-18.0 (8 - 80)	Small/medium soldering & flex soldering
SH500	6.7 - 112.4 (30 - 500)	Medium/large soldering, flex soldering & ACF bonding
<b>System solutions:</b>		
<b>Desktop bonders</b>	1.8 - 112.4 (8 - 500)	Small to large soldering, flex soldering & ACF bonding; request/see datasheet #991-006
<b>Auxiliary thermocouples</b>		
AUXTC/E	Auxiliary thermocouple, type E, 5 ft. long	
AUXTC/K	Auxiliary thermocouple, type K, 5 ft. long	
AUXTC/J	Auxiliary thermocouple, type J, 5 ft. long	

Switched Input electrical specifications	
<b>Operator initiation</b>	1 or 2 level footswitch
<b>Dedicated relays</b>	24 VAC/24 VDC 0.3 A
<b>Air head</b>	ON/OFF for head actuation
<b>Head cool</b>	ON/OFF for cooling thermode holder
<b>Solder cool</b>	ON@COOL, OFF@PREHEAT
<b>Programmable relays</b>	7 each, electromechanical (24 VAC or +24 DC)
<b>Contact rating</b>	24 VAC/24DC, 0.3 A
<b>Communication ports</b>	RS-232, RS-485
<b>Programmable relay functions –</b>	Reflow, preheat, baseheat, idle on, alarm, out of limits, clean thermode, replace thermode, end reflow, heat on, head valve active, system ready
<b>Operating temperatures</b>	59° F (15° C) – 104° F (40° C)
<b>Relative humidity, max.</b>	93% @ 104° F (40° C)

Power Supply Ordering Guide		
Power Supplies	Description	Electrical
UNFE2/120 Uniflow 4	Uniflow power supply, 120 VAC, 2 kVA transformer	15 A, single phase 50 or 60 Hz
UNFE4/240 Uniflow 4	Uniflow power supply, 240 VAC, 4 kVA transformer	15 A, single phase 50 or 60 Hz
UNFE4/240/EAPRO Uniflow 4	Uniflow power supply, 240 VAC, 4 kVA transformer	15 A, single phase 50 or 60 Hz
UNFE4/240 Uniflow 4R	Uniflow power supply, 240 VAC, no transformer	15 A, single phase 50 or 60 Hz
UNFE4/240/EAPRO Uniflow 4R	Uniflow power supply, 240 VAC, no transformer	15 A, single phase 50 or 60 Hz

### Remote Transformer Ordering Guide (select one for use with Uniflow 4R)

Remote Transformer	Description
X4/240UNF	4 kVA transformer, 0.95 to 3.81 secondary voltage range
X4/240UNFHV	4 kVA transformer, 1.90 to 7.62 secondary voltage range
X2/240UNF	2 kVA transformer, 0.95 to 3.81 secondary voltage range
X2/240UNFHV	2 kVA transformer, 1.90 to 7.62 secondary voltage range

Pulse Heated Thermodes	Description	Application/Size*: Inches (mm)
17P	Peg tip	Thermocompression bonding–single point soldering / .020 to .093 (0.5 to 2.4)
17T	"T" tip	Thermocompression bonding–single point soldering / .008 x .010 (0.2 x 0.25)
17BM	Blade	Multiple contacts / .030 to 1.0 (0.76 to 25.4)
17F	Nichrome fold-up	Multiple contacts / .250 to 1.0 (6.45 to 25.4)
17TD	Three dimensional	Multiple contacts / 1.0 to 3.0 (25.4 to 76.2)

\*NOTE: Standard size ranges are listed, consult Amada Miyachi America for custom requirements and application advice.

## WEIGHT & DIMENSIONS

	Uniflow 4	Uniflow 4R Control	Uniflow 4R 2 kVA Xfmr	Uniflow 4R 4 kVA Xfmr
<b>Dimensions (L x W x H)</b>	18.33 in x 10.0 in x 12.6 in (466 mm x 254 mm x 319 mm)	11.12 in x 11.21 in x 5.18 (282 mm x 285 mm x 132 mm)	11.91 in x 7.04 in x 7.81 in (303 mm x 179 mm x 198 mm)	14.55 in x 7.04 in x 7.81 in (370 mm x 179 mm x 198 mm)
<b>Weight</b>	2 kVA: 48 lb (21.8 kg)    4 kVA: 60 lb (27.2 kg)	19 lb (8.6 kg)	31 lb (14.1 kg)	48 lb (21.8 kg)

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