

Uniflow4[®] Pulsed Heat Control System



Uniflow 4 standard version



Uniflow 4R remote version

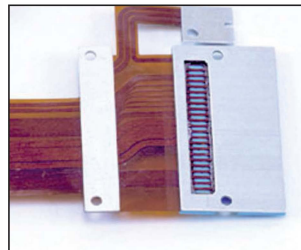
Uniflow4 is a power supply for pulse-heated elective soldering, conductive adhesive bonding, and thermo-compression bonding.

Utilizing pulsed heat technology, the Uniflow4 power supply provides targeted heating and precision temperature control for a variety of joining applications.

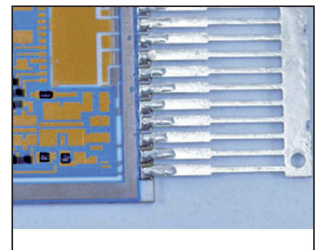
KEY FEATURES

- 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
- Choice of a standard unit with built-in transformer or remote unit with small control unit and remote transformer. There are four versions of the remote transformers with a choice of two energy levels and two thermode voltage ranges for additional application flexibility

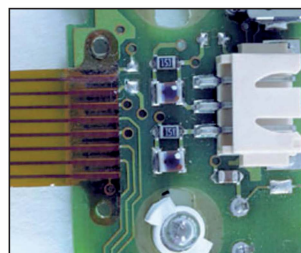
TYPICAL APPLICATIONS



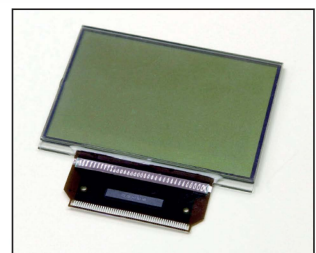
Medical



Automotive



Consumer Electronics



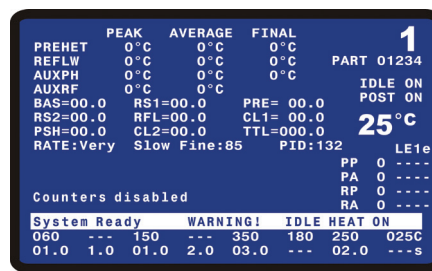
Aerospace

TECHNICAL SPECIFICATIONS

Temperature profile specifications			
Temperature range idle baseheat preheat	25 to 300 °C 25 to 300 °C 60 to 500 °C	Heat Heat Extended Range Postheat	60 to 600 °C 60 to 999 °C 25 to 999 °C
Time period (in 0.1 Sec increments) base heat rise to preheat time preheat	0 to 99.9 seconds 0 to 9.9 seconds 0 to 99.9 seconds or continuous	Rise to Heat Time Heat Postheat	0 to 9.9 seconds 0.1 to 99.9 seconds 0 to 99.9 seconds
Temperature control accuracy repeatability	± 2% of reading or ± 6 °C whichever is greater ± 1% of reading		
Thermocouple input	Type E, J, or K		
Heating rate control	Three integrated user-set parameters optimize temperature profile		
Interrupt function (optional)	Stop heating cycle at reach of force or displacement limit through external device		
Programmable heat profiles	Sixty three (63) non-volatile memory		
Switched input electrical specifications			
Operator initiation	1 or 2 level footswitch		
Dedicated relays	24 VAC/ 24 VAC 0.3A		
Air head Head cool solder cool programmable relays contact rating	ON/OFF for head actuation ON/OFF for cooling thermode holder ON@COOL, OFF@PREHEAT 7 each, electromechanical (24 VAC or +24 DC) 24 VAC/24DC, 0.3A		
Communication ports	RS-232, RS-485		
Programmable relay functions	Reflow, preheat, baseheat, idle on, alarm, out of limits, clean thermode, replace thermode, end reflow, heat on, head valve active, system ready		

PHYSICAL/ENVIRONMENTAL SPECIFICATIONS

Operating temperatures	59°F (15° C) – 104°F (40 °C)
Relative humidity, maximum	93% @ 104°F 40 °C
Power supply ordering guide	
UNFE2/120 Uniflow 4	Uniflow Power Supply, 120 VAC, 2kVA transformer / 15A, Single Phase 50 or 60 Hz
UNFE4/240/EAPRO Uniflow 4	Uniflow Power Supply, 240 VAC, 4kVA transformer / 15A, Single Phase 50 or 60 Hz
UNFE4/240/EAPRO Uniflow 4R	Uniflow Power Supply, 240 VAC, no transformer / 15A, Single Phase 50 or 60 Hz



Graph screen showing temperature profile and envelope limits

POWER SUPPLY ORDERING GUIDE

UNFE2/120 Uniflow 4	Uniflow Power Supply, 120 VAC, 2kVA transformer / 15A, Single Phase 50 or 60 Hz
UNFE4/240/EAPRO Uniflow 4	Uniflow Power Supply, 240 VAC, 4kVA transformer / 15A, Single Phase 50 or 60 Hz
UNFE4/240/EAPRO Uniflow 4R	Uniflow Power Supply, 240 VAC, no transformer / 15A, Single Phase 50 or 60 Hz

OPTIONAL EQUIPMENT ORDERING GUIDE

Suggested basic system: power supply, reflow head, thermode, footswitch, auxiliary thermocouple		
Reflow Heads	Force Range lbs. (Newton)	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
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
SH1250	Force range: 56.2-281 (250-1250)	App guideline:
System solutions:		
Desktop bonders	1.8 - 112.4(8 - 500)	Small to large soldering, flex soldering & ACF bonding

REMOTE TRANSFORMER ORDERING GUIDE (SELECT ONE FOR USE WITH UNIFLOW 4R)

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

AUXILIARY THERMOCOUPLES

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

PULSE HEATED THERMODES

	Sizes (in mm)	Application
3D thermo-plane thermode	Width: < 4 mm, length: 1-150 mm	Reflow soldering & ACF bonding
2D thermode	Width: < 3 mm, length: 5-50 mm	Reflow soldering
Heat stake thermode	Dome shape: circle/square	Heat staking

For more information on pulsed heat thermodes, request datasheet pulsed heat thermod
 For more information on thermodes and QCB configurations, request datasheet Bonding Heads 06-2014.

WEIGHT & DIMENSIONS

Dimensions HxWxD (mm)	Uniflow 4: 12.6 x 10.0 x 18.33 (319 x 254 x 466) Uniflow 4R Control: 5.18 x 11.21 x 11.12 (132 x 285 x 282) Uniflow 4R 4 kVA Xfmr: 7.81 x 7.04 x 14.55 (198 x 179 x 370) Uniflow 4R 2 kVA Xfmr: 7.81 x 7.04 x 11.91 (198 x 179 x 303)
Weight (kg)	Uniflow 4 2 kVA: 48lbs (21.8) Uniflow 4 4 kVA: 60lbs (27.2) Uniflow 4R Controller: 19lbs (8.6) Uniflow 4R 2kVA Transformer: 31lbs (14.1) Uniflow 4R 4kVA Transformer: 48lbs (21.8)