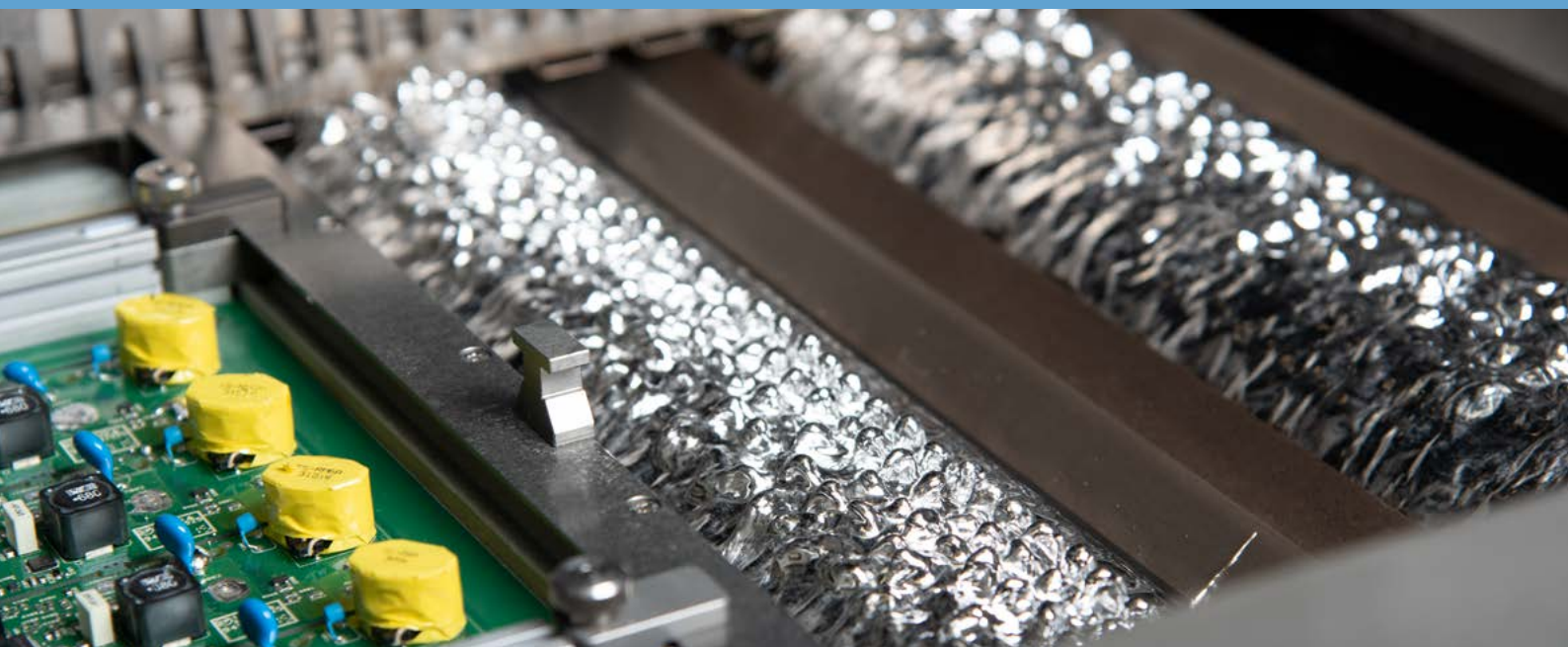


POWERFLOW ULTRA

Full-tunnel wave soldering system for maximum flexibility and throughput



Ersa POWERFLOW ULTRA

Ready for the future



Highlights POWERFLOW ULTRA

- XXL version for processing PCB sizes of up to 715 x 610 mm/ 28" x 24" (L x W)
- Modular preheating concept with convection heating and emitters; variable in configuration
- Up to 5 preheating modules possible (heating length 3,000 mm)
- Sequential soldering
- Automatic production with code operation possible
- ERSASOFT 5 operating software on database basis
- Ready for Industry 4.0
- Ultrasonic fluxer

The POWERFLOW ULTRA is the latest innovation in the wave soldering portfolio of Ersa GmbH. This full-tunnel wave soldering system meets current and future flexibility and throughput requirements, and it is, of course, Industry 4.0 capable.

The machine is available with both frame and finger conveyor. Working widths range from 330 mm up to 610 mm in the XXL version. Thus, for example, server boards for 5G telecommunication can be soldered with the POWERFLOW ULTRA XXL.

Fluxer

Ersa offers numerous innovative solutions in the field of fluxing. Particular attention is paid to the safety of the

systems, but also to cost-effectiveness, i.e. flux consumption and processing speed. Product-specific spray areas are defined via the graphical user interface of the modern ERSASOFT 5 operating software, which significantly reduces flux consumption.

As an option, an ultrasonic fluxer which stands out by effective flux application and minimum maintenance is also available.

Preheating

A further highlight of the POWERFLOW ULTRA is the preheating section of up to 3 m length, which enables a high throughput. Due to its modular design, it can be assembled according to individual requirements



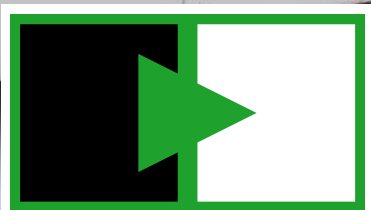
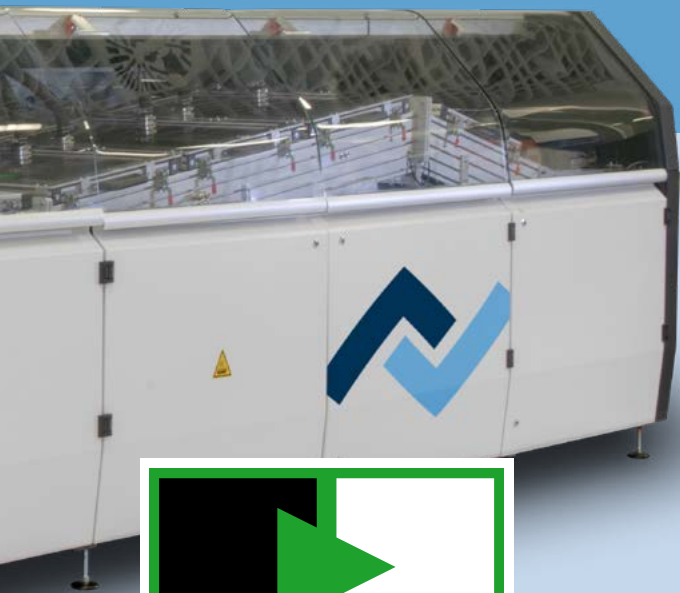
Preheating: medium-wave emitter



Preheating: dynamic IR emitters



Preheating: convection module



IPC-HERMES-9852

The global standard for "M2M" in SMT assembly

Basic configuration

- Consistent, complete lead-free capability
- Resistant to VOC-free, water-based fluxes
- Precise spray fluxer with motorized axis drive and 10 l flux tank (25 l optional)
- Frame or finger conveyor with different working widths
- Preheating length 1,800 mm
- Modern control concept
- Simple operation via desktop PC or touchscreen (optional)
- Continuous monitoring of all relevant soldering parameters

and thus be optimally adapted to the production. For this purpose convection heaters as well as medium-wave emitters and short-wave infrared emitters are available.

Convection modules are especially suitable for the processing of heavy-mass components that require heating on the placement side or when heat-sensitive components are being used that must not be overheated during the preheating process. The short-wave emitters are very dynamic. They react immediately, making them highly suitable for mixed production.

Soldering module

The POWERFLOW ULTRA works with the proven Erska double wave soldering

technology. On this basis, the soldering module has been completely redesigned. Using various combinations of the soldering nozzles, the user-friendly soldering unit can be optimally adapted to the respective application. In addition to long wetting times, high wave heights are also possible.

ERSASOFT 5

The new version of our proven machine software convinces not only by its modern visualization but also by its user-friendly structure. Individual user interfaces provide each operator group at a glance with the data and information they need.



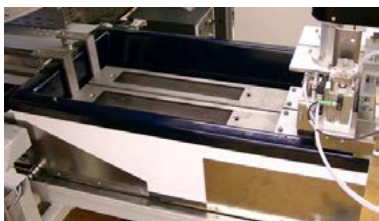
Ultrasonic fluxer



Innovative ERSASOFT 5

Patented soldering

Innovative nozzle combinations for every application



Maintenance-friendly solder pot



Patented Vario Wave soldering nozzle

The user-friendly soldering module can be equipped with a wide range of different soldering nozzles, whereby the nozzle combination can be optimally adapted to the respective soldering task in order to ensure the highest soldering quality.

One example from the Erska nozzle portfolio is the patented Vario Wave nozzle, which incorporates Erska's many years of soldering experience: This nozzle has outstanding dynamics and very good flow and tear-off characteristics. Therefore we can recommend this nozzle for selective masks made for higher components. It is also suitable for the soldering of difficult SMD geometries on the bottom side of PCBs.

All relevant parameters of the soldering module are continuously monitored.

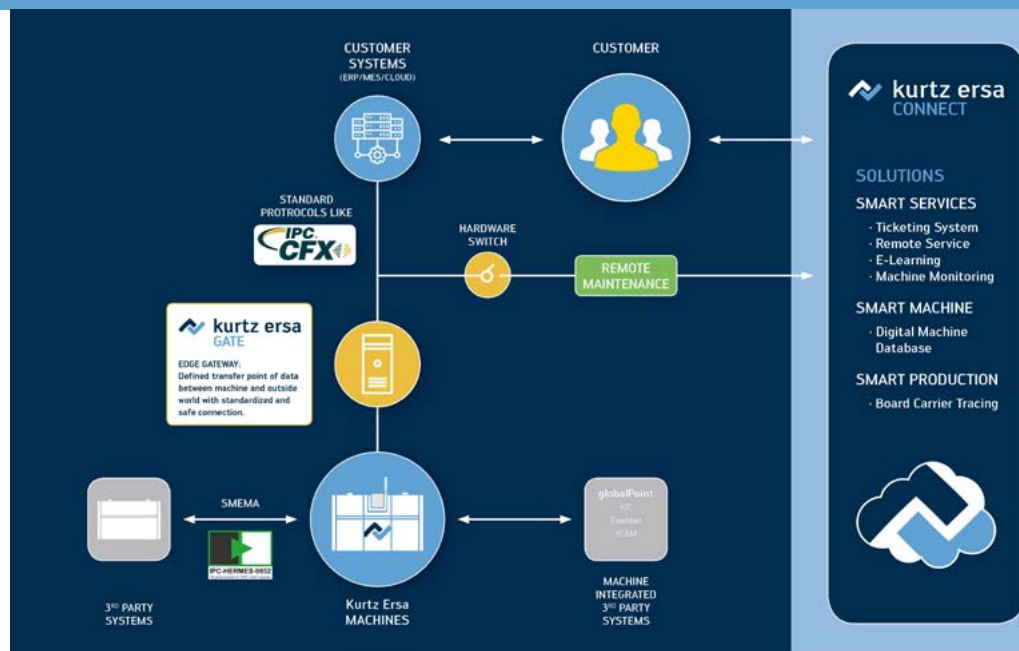
These include solder temperature, solder level in the solder pot, speed of the solder pump drives, bar supply in the automatic solder bar feeder as well as the content of residual oxygen of the nitrogen atmosphere in the process tunnel. This guarantees reliable soldering processes.

The distance between the soldering nozzles and the PCB, the clearance height, can be comfortably adjusted from the outside without having to open the process tunnel. Alternatively, this can also be done automatically via optional actuators. This parameter is stored in the soldering program, like all other module-specific soldering parameters. This means that, in a mixed production, the clearance height can be specifically adapted to the assembly which leads to higher system availability.

Innovative ERSASOFT 5

The data always in sight

Combination of Vario Wave solder nozzles



Industry 4.0
Kurtz Ersasoft Connect

The operating software of the POWERFLOW ULTRA and POWERFLOW PRO wave soldering systems is ERSASOFT 5. This proven software platform is based on a databank. In addition to machine control, it also stores production data. Therefore, information such as process parameters, operating, fault and maintenance messages is available in a structured way and can be retrieved quickly and easily later on, for example for long-term evaluations or trend analyses. Thanks to an adjustable automatic backup interval, the database offers a high level of data security.

In addition, the database can be installed in the customer's data center.

This allows several machines to access the database and exchange data via the company network. If, for example, a product is manufactured at several locations, this ensures that the process is the same at all production sites - no matter where the machine is located in the world. Data records can also be subsequently modified to eliminate existing errors.

Thus ERSASOFT 5 is the foundation for Industry 4.0. We offer you future-proof Industry 4.0 solutions and services with added value for production, process monitoring and quality assurance. Among other things through standardized connectivity with the greatest possible security using Kurtz Ersasoft CONNECT and Kurtz Ersasoft GATE.



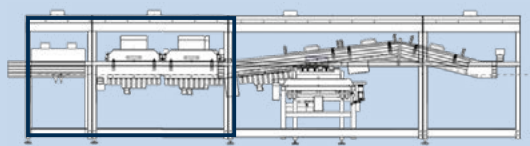
Innovative ERSASOFT 5



GERMAN DESIGN AWARD

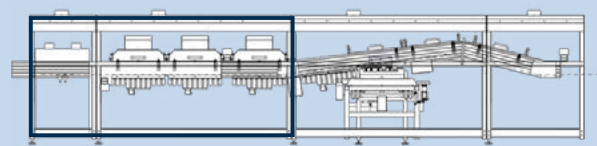
Ersa POWERFLOW ULTRA

Maximum flexibility – the right solution for every requirement



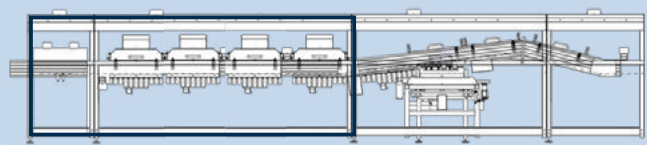
3 preheating modules

Total machine length: 6,200 mm (incl. infeed 500 mm)*



4 preheating modules

Total machine length: 6,950 mm (incl. infeed 500 mm)*



5 preheating modules

Total machine length: 7,700 mm (incl. infeed 500 mm)

**The machine lengths above are indicated without outfeed.*

Thanks to the modular machine design, the POWERFLOW ULTRA can be individually adapted to customer requirements. For this purpose, three different preheating lengths of 1.8 m, 2.4 m and 3 m are available. This configuration option ensures that the preheating throughput does not affect cycle time in a negative way.

In addition, the POWERFLOW ULTRA scores with different conveyor systems: A frame transport is available for working widths of 330 mm and 400 mm. Using a finger conveyor, the working width is max. 406 mm. The POWERFLOW XL offers larger working widths of 500 mm for frame conveyor and max. 520 mm for finger conveyor. But it can also be even larger: The POWERFLOW ULTRA XXL provides a working width of 610 mm. In addition, PCB lengths of up to 715 mm are possible. However, this machine version is only available with finger conveyor and a preheating length of 2.4 m.

POWERFLOW ULTRA (machine 3 preheating modules)

| | |
|---------|---------------------------------------|
| Length: | 5,700 mm (6,425 mm incl. conveyor) |
| Width: | 1,400 mm/1,513 mm*/1,613 mm** |
| Height: | 1,580 mm |
| Weight: | approx. 2,800 kg/approx. 2,850 kg* |

Conveyor system

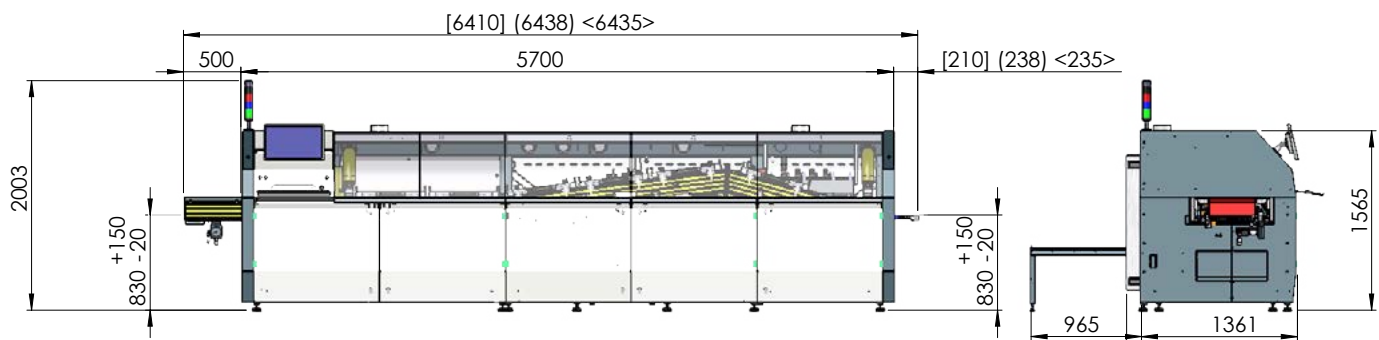
| | |
|---|------------------------------------|
| Type: | finger conveyor, frame conveyor |
| Conveyor width with finger conveyor: | 60 – 406 mm/ 508 mm*/610 mm** |
| with frame conveyor: | 330/400 mm/500 mm* |
| PCB length: | 120 – 600 mm/715 mm** |
| PCB clearance: | 80 mm (option: up to 150 mm) |
| Conveyor speed: | 0,5 – 2,5 m/min |
| Conveyor angle: | 7° (fixed angle) |

Max. preheat length

| | |
|-----------|-------------|
| Standard: | 1.8 m |
| Option: | 2.4 & 3.0 m |

Ersa POWERFLOW ULTRA

Technical data and Machine options



Specifications refer to the basic machine and may vary depending on the configuration

Inert gas

| | |
|------------------------------|---------------------------|
| Inlet pressure: | 8 bar |
| Recommended inert gas class: | 99,999 % |
| Nitrogen consumption: | 16 – 20 m ³ /h |

Environmental specifications/noise level

| | |
|------------------------|---------------------------------|
| Ambient temperature: | 10 – 35 °C |
| Humidity: | 20 – 95 % (non-condensating) |
| Permanent noise level: | < 65 dBA |

Flux module

| | |
|--------------------|------------------------------|
| Flux storage tank: | 10 l |
| Spray pressure: | 0.9 – 2.5 bar |
| Flux system: | 1-axis system with CAN motor |

Bottom-side preheat module

| | |
|-------------|----------------------------|
| Type: | dynamic short-wave emitter |
| Capacity: | max. 10.4 kW (controlled) |
| Dimensions: | length 600 mm/width 720 mm |
| Type: | medium-wave emitter |
| Capacity: | max. 6 kW (controlled) |
| Dimensions: | length 600 mm/width 720 mm |
| Type: | convection heater |
| Capacity: | max. 10.2 kW (controlled) |
| Dimensions: | length 600 mm/width 720 mm |

Top-side preheat module

| | |
|-------------|----------------------------|
| Type: | convection module |
| Capacity: | max. 6 kW (controlled) |
| Dimensions: | length 600 mm/width 720 mm |

Compressed air

| | |
|------------------------|----------------------------------|
| Compressed air supply: | to be provided locally |
| Inlet pressure: | min. 6 bar |
| Air consumption: | approx. 5 – 10 m ³ /h |

Soldering module

| | |
|---------------------|---|
| Capacity: | approx. 9.2 kW |
| Solder volume: | approx. 525 kg/600 kg*/700 kg** (when using lead-free alloys) approx. 630 kg/725 kg*/800 kg** (when using SnPb37 EQ) |
| Warm-up time: | 3.5 h – 4 h* (260 °C) |
| Solder temperature: | max. 300 °C |
| Solder bar feeder: | automatic |

Electrical data

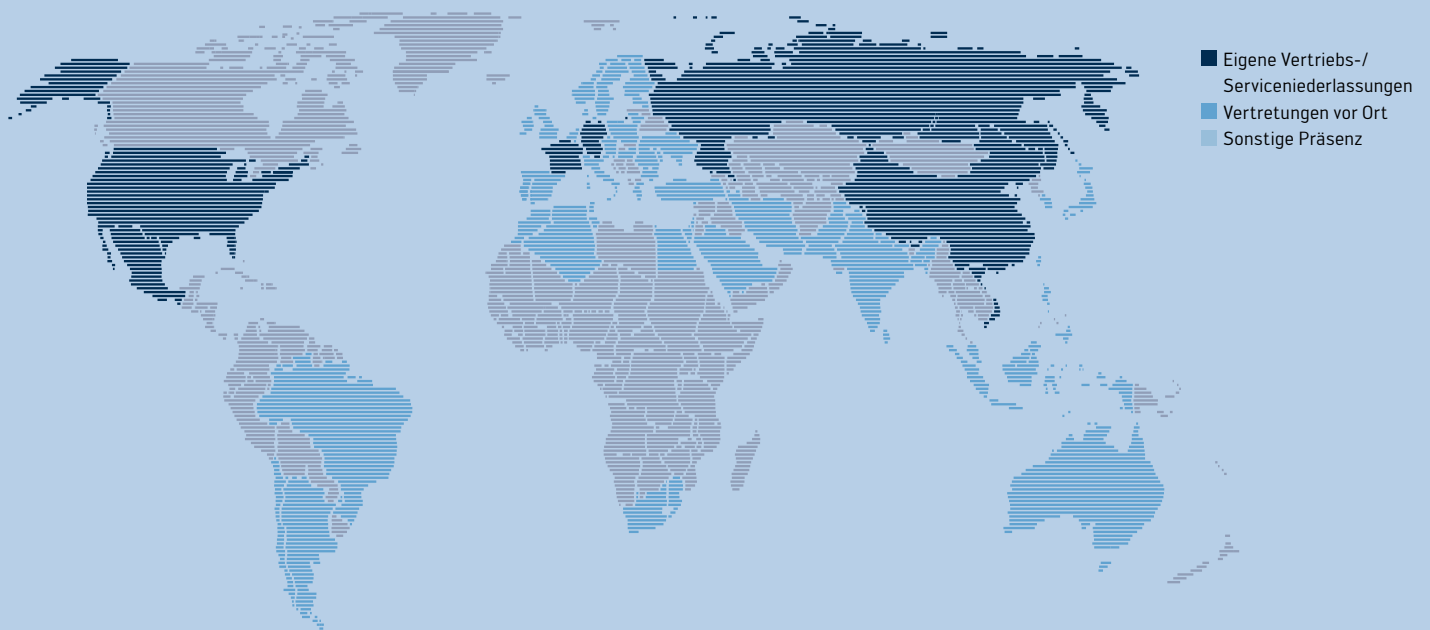
| | |
|------------------------|-------------------------------------|
| Voltage: | 5-wire system, 3 x 230/400 V, N, PE |
| Power tolerance range: | ± 10 % |
| Frequency: | 50 / 60 Hz |
| Fuse rating: | 3 x 125 A (slow blow) |
| Amperage: | 114 A |
| Capacity: | 79 kW |

Extraction

| | |
|----------------------|---|
| Exhaust connections: | 1 x 800 m ³ /h and 2 x 200 m ³ /h |
|----------------------|---|

*POWERFLOW ULTRA XL
**POWERFLOW ULTRA XXL

Electronics Production Equipment Weltweit präsent



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