ERSA ECLOSELECT 2

In- and off-line cell concept for selective soldering with best price/performance ratio

ECLOSECT 2 – for your modular production line

As the world’s technology leader in selective soldering systems ERSA supplement their successful VERSAFALOW series with a compact selective soldering system: the ECLOSECT 2.

It is the optimal solution for small and medium scale production where flexibility is paramount. The machine’s design focuses on providing reproducible quality while being simple to operate. The intelligent and clearly structured software allows for easy and effective machine programming, and it records all relevant production parameters.

One highlight is the graphical programming via the optional CAD Assistant 2 software. It ensures very quick and easy off-line programming, while the machine continues running in production. Alternatively, the machine can be programmed via DXF files or scanned PCBs. Unauthorized machine operation is prevented by the user administration feature.

Like all ERSA selective soldering systems, the ECLOSECT 2 is equipped with a programmable high-precision fluxer for single dot or line flux application. An integrated spray control monitors the flux jet’s position. Due to the extremely accurate flux application, flux consumption is kept to an absolute minimum, and because of the virtual absence of overspray, very clean assemblies are ensured.

Short-wave, bottom-side IR emitters allow for short preheating processes. The heating cassette segments can be activated subject to the product. By means of the optional top-side convection preheater, a homogenous warm-up of even complex assemblies is achieved.

Heart and soul of the ECLOSECT 2 is the soldering process itself. The »Peel off« Effect which has been developed by ERSA allows for 0° soldering without bridge formation and guarantees lowest DPM rates. The solder pot requires very little maintenance, and it is free of parts that need to be considered consumables.

Innovative monitoring systems ensure reproducibility of your production parameters. Thus the new ECLOSECT 2 in- and off-line cell concept offers the best price/performance ratio for high-quality selective soldering, and it is a perfect and flexible solution for both first-time users and manufacturers with small to medium series production.

Features ERSA ECLOSECT 2

- Pin-and-chain conveyor for PCB transport (Single Track)
- Manual conveyor width adjustment
- Programmable conveyor width adjustment
- Infeed and outfeed modules
- Fluxer module with precision spray fluxer
- Bottom-side preheating via short-wave, dynamic IR emitters
- Top-side convection heating
- Lead-free Single Point solder module
- Second solder pot to process two different solder alloys
- Second solder pot to process multi-up panels
- In-line interface (e.g. SMEMA, etc.)
- Camera/screen for solder process monitoring
- Bar code scanner (bar codes/2D)
- CAD data download of board layouts (CAD Assistant)
- Operation via touch panel
- Traceability

P/n-and-chain conveyor  Best accessibility: flux storage tanks for the flux supply
IR preheating, extendable by top-side convection heaters  Optional top-side heating for perfect preheating
Solder module with nozzle. second solder pot installable on the same axial system  Second solder pot to process multi-up panels or two different solder alloys

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**Ersa EC0SELECT 2**

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**Dimensions (basic machine):**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>2,300 mm [91&quot;]</td>
</tr>
<tr>
<td>Width</td>
<td>1,730 mm [68&quot;]</td>
</tr>
<tr>
<td>Height</td>
<td>1,612 mm [63&quot;]</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 900 kg [1,984 lbs]</td>
</tr>
</tbody>
</table>

**Conveyor system:**

Pin-and-chain conveyor for PCB transport

- Conveyor angle: 0° [fix]
- PCB width (Single Track): 63.5 - 406 mm [2.5 - 16"]
- PCB length: 127 - 508 mm [5 - 20”]
- PCB top-side clearance (basic machine): 60 - 120 mm [2 - 5"]
- PCB bottom-side clearance: max. 60 mm [2"] (subject to soldering joint position)
- PCB bottom-side clearance from edge: 5 mm [0.2"]
- Conveyor height from floor: 850/950 mm, ±25 mm [33”/37” ±1”]
- Conveyor speed: 2 - 10 m/min [7 - 33/”min]
- Pallet/PCB weight: max. 8 kg [18 lbs]

**Flux module:**

Precision spray fluxer installed on joint axes system

- Flux tank: 2 l
- Positioning speed: 2 - 200 mm/s [0.04 - 8"/s]
- Positioning accuracy: ±0.25 mm [±0.01”]
- Spray width: 2 - 8 mm [0.08 - 0.3”] (130 µm nozzle)

**Preheat module (option):**

Dynamic bottom-side infrared emitters:

- max. 12 kW

Temperature range:

- 0 - 200 °C [32 - 392 °F] (power adjusted)
- Dynamic top-side convection heater: 6 kW

**Solder module:**

Stainless steel solder pot, integrated in a 3-axes positioning system (X/Y/Z), servo motor driven

- Solder nozzle: Single-Point high-precision nozzle
- Smallest solder nozzle diameter: OD 4.5 mm [0.2”] (further nozzles on request)
- Wave height: max. 5 mm [0.2”]
- PCB clearance: min. 5 mm [0.2”]
- Solder volume: approx. 13 kg [29 lbs] (Sn63Pb); approx. 12 kg [26 lbs] (lead-free alloy)
- Solder temperature: max. 320 °C [608 °F]
- Heating time: 75 min (to 280°C) [to 536 °F]
- Positioning speeds:
  - X/Y: 2 - 200 mm/s [0.04 - 8”/s]; Z: 2 - 100 mm/s [0.08 - 4”/s]
- Soldering speed: 2 - 100 mm/s [0.08 - 4”/s]
- Positioning accuracy: ±0.25 mm [±0.01”]

**Nitrogen technology:**

- Nitrogen supply: to be supplied locally
- Nitrogen injection: N2 cover over the solder bath
- Nitrogen consumption: approx. 15 m³/h [53 ft³/h] per solder pot
- Particle cleanliness: 5.0 recommended

**Pneumatic system:**

Compressed air supply:

- to be supplied locally
- Required pressure: 6 bar [87 PSI]

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**Control:**

Computer-based microprocessor (state-of-the-art control technology)

- Process visualization
- Input of all process parameters
- 7 day time clock
- Machine status control
- Password function
- Production-, process- and traceability data recording

**Electrical data:**

- Power: 5-wire system, 3 x 230/400 V, N, PE
- Power tolerance range: ±5 %
- Frequency: 50/60 Hz
- Power consumption: 19 kW (basic machine incl. bottom-side preheating system)
- Max. fuse rating: 3 x 35 A

**Machine exhaust (basic machine):**

- Exhaust stack: 1 pc., OD 150 mm [6”]
- Exhaust volume per stack: 150 m³/h [196 yd³/h]

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**Ambient conditions / noise level:**

- Ambient temperature: 15 - 35 °C [59 - 95 °F]
- Permanent noise level: < 60 dB (A)

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**Basic design & construction:**

- Solid steel construction
- Security glass windows
- Emergency-Stop button