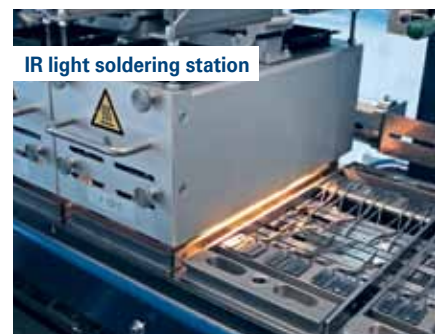


# STRINGER TT1800

The world's fastest single-track high-speed stringer



- High throughput: 2.0 seconds cycle time
- Low breakage rate < 0.1 - 0.3 %
- Availability > 95 %
- Cost-effective and economical production

## High flexibility and technical availability

Extensive practical experience with string soldering machines at teamtechnik led to the development of the STRINGER TT1800, a highly flexible production system.

teamtechnik uses hold-down devices in its systems to separate the soldering process from the cell handling process. This guarantees 1,800 cycles/hour on a single-track – a technology that is already being used successfully in over 500 systems throughout the world. At the same time the devices ensure safe and reliable process steps and minimal breakage rates as well as precise positioning and alignment of cells and ribbons. The resulting strings offer impressive geometrical quality, linearity, length tolerance and cell gaps with excellent cell and ribbon positioning ( $\pm 0.2$  mm position accuracy).

## Technical Data STRINGER TT1800

Soldering technology	IR light
Cell technology, types	mono-/poly-crystalline, front & back side contacted, all commercially available types
Cell alignment	optical alignment via camera & robot for busbar or edge positioning
Cell inspection	vision system (camera), detection of accuracy for cracks, broken edges and scratches: 0.5 x 0.5 mm, grid-completeness check
Suitable for lead-free (Pb) ribbons	yes
Number of interconnection ribbons	2 - 3 - 4 - 5 (as option)
Range of solar cell sizes	125 sq. (5") - 156 sq. (6") as standard; half cell, changeover parts required
Busbar spacing	30 - 78 mm, 31.2, 39, 52, 75 mm as standard, other dimensions require changeover parts
Cell spacing (varies with cell size)	2.0 - 35.0 mm as standard
Cell positioning accuracy	± 0.2 mm
Max. length of strings	max. 2,000 mm, accuracy in length ± 1 mm
Throughput (4.25 W per cell, 22.5 h, 265/300/342 days p.a.)	max. 1,800 cycles/h, 1,636 cells/h for a 10 cell-string including cell fluxing, 39/44/50 MWp p.a.
Technical availability	> 95 %
Noise level	max. 72 dB(A)
Machine size	8.0 m x 1.9 m x 2.3 m
Weight	5,000 kg
Electrical power requirement	IR light: 30 kVA
Average power consumption (p. hour)	15 kWh
Compressed air requirement	600 kPa (6 bar)
Compressed air consumption (at 1 bar)	450 l/min
Flux application method for cells	cells fluxed with adjustable, metered micro spray; top and bottom side
Cell thickness processing capability	160 - 250 µm, 180 µm as standard
Breakage rate	on cell thicknesses down to 180 µm < 0.3 % (varies according to cell quality)
Ribbon sizes	width > 0.8 mm, different sizes may require changeover parts
Ribbon positioning accuracy	± 0.2 mm
Changeover time from e.g. 3 to 4 bb, 3 to 5 bb	approx. 2 hours
Operator interface (HMI)	color touch screen with German/English/Chinese and other language options
Unloading system (Layup)	manual as standard or automatic with robot as available option
Warranty	12 months

### Trust the world market leader!

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