

STRINGER TT2100

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



Precise cell and ribbon handling



IR light soldering station

- High throughput: 1.71 seconds cycle time
- Low breakage rate < 0.1 - 0.3 %
- Availability > 95 %
- Cost-effective and economical production
- Compact footprint

High flexibility and technical availability

Extensive practical experience with string soldering machines at teamtechnik led to the development of the all new STRINGER TT2100, a highly flexible production system with a compact footprint.

teamtechnik uses hold-down devices in its systems to separate the soldering process from the cell handling process. This guarantees 2,100 cycles/hour on a single-track – a technology that is already being used successfully in over 600 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.

Technical Data STRINGER TT2100

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	3 - 4 - 5 - 6 (as option)
Range of solar cells	156 x 156 mm - 156,75 x 156,75 mm (6") as standard; half cells, changeover parts required
Busbar spacing	26 - 52 mm; 26, 31.2, 39, 52 mm as standard, other dimensions require changeover parts
Cell spacing (varies with cell size)	2.0 - 8.0 mm as standard
Cell positioning accuracy	± 0.2 mm
Max. length of strings	max. 2,000 mm, accuracy in length ± 1 mm
Throughput (4.5 W per cell, 22.5 h, 300/330/355 days p.a.)	max. 2,100 cycles/h, 1,909 cells/h for a 10 cell-string including cell fluxing, 55/60/65 MWp p.a.
Technical availability	> 95 % (VDI 3423)
Noise level	max. 69 dB(A)
Machine size	5.80 m x 1.75 m x 2.30 m
Weight	3,500 kg
Electrical power requirement	22 kVA
Average power consumption (p. hour)	13.3 kWh
Compressed air requirement	600 kPa (6 bar)
Compressed air consumption (at 1 bar)	400 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 > 0.6 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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