Datasheet

Wire Bonder G5-XL –
The first wire bonder with a working area of almost one square metre

As so often, with the XL bonder F&K Delvotec Engineering created pioneering innovation. With the largest working area in the world, bonding large components such as battery modules for electric autos or PV concentrator cells is easy. The guarantee for the best quality and Zero-Defect-Production: despite the long traverse path the bond arm has very low vibrations and is positioned with micron accuracy.

Advantages

- Work area 1,130 mm (X) x 700 mm (Y); 44” x 27”
- Cantilever design enables double component width
- Access to the work area from all sides for manual loading
- Fast and simple changeover of bond heads in under 15 minutes
- Continuous monitoring and active control of the bond process using the patented Bond Process Control
- Manifold possibilities for automation from manual to in-line
**Available wire bonding technologies**

**Fine Wire Wedge-Wedge** (G5 64000)
- **Applications:** Pressure sensors, PCBs, automotive, HF-components, lead-frame applications
- **Wire size:** Ø 17 µm to 75 µm (aluminium, gold, other materials on request)
- **Programmable bond weight**
- **Speed:** 2 to 3 wires per second depending on the application
- **Feed:** 90° wire feed
- **Spool size:** 3” to 4”
- **Optional:** Quick exchangeable cutter-blade

**Deep Access Fine Wire Wedge-Wedge** (G5 64000DA)
- **Applications:** high frequency, microwave, military, opto-electronics
- **Wire size:** Ø 17 µm to 75 µm (aluminium, gold, other materials on request)
- **Ribbon size:** up to 250 µm x 50 µm
- **Programmable bond weight**
- **Speed:** 2 to 3 wires per second, depending on the application
- **Feed:** 90° wire/ribbon feed
- **Spool size:** 2”
- **Optional:** Single wire clamp cascadable with holding clamp for secure tear-off

**Heavy Wire Wedge-Wedge** (G5 66000)
- **Applications:** power modules, automotive components, hybrid components
- **Wire size:** Ø 100 µm to 600 µm (aluminium, copper, aluminium sheathed copper, other materials on request)
- **Programmable bond weight**
- **Speed:** 1-2 wires per second, depending on application
- **Feed:** 90° wire feed
- **Spool size:** 3” to 4”
- **Optional:** Supports heated stations

**Heavy Ribbon Wedge-Wedge** (G5 66000HR)
- **Applications:** power modules, E-Mobility, battery connections, photovoltaic modules, LED-Backlights
- **Ribbon size:** up to 2000 µm x 300 µm (aluminium, copper)
- **Programmable bond weight**
- **Speed:** 1-2 connections per second (depending on the application)
- **Feed:** 90° ribbon feed
- **Spool size:** 3” to 4”
Manual or fully automatic

Manual work station

- Work station of any size up to the maximum work area 44” x 27”
- Vacuum or mechanical clamping

Fully automatic indexing system

- Standard or customer specific design
- Synchronised feed system for customer specific substrates
- Supports pre-heat and heated bonding stations
- Stopper system and anti-crash sensors
- Double track indexer

Material and parts handling

- Customer specific material transport by conveyor systems or robots
- Customer specific line integration via our parent company Strama-MPS

Quality tools

Bond Process Control BPC

- Closed Loop System for continuous monitoring and real-time control of bond parameters, time, ultrasonic power and bond force
- Adjustment of the ultrasonic power to surface variations in the current process
- Statistical process control through continuous logging of the process parameters in a data base

In-Head pull-tester

- In-Head pull-tester for non-destructive bond testing
- Visual display via a graphical software interface
Machine data

- **Machine**
  G5-XL wire bonder

- **Dimensions (H, W, D)**
  1,850 x 1,710 x 1,850 mm

- **Weight**
  1,400 kg

- **Working Area**
  X: 1,130 mm
  Y: 700 mm
  Z: 40 mm (60 mm optional)
  P-Range: 200° in each direction (220° optional)

- **Available bond heads or bond technologies**
  - G564000 (fine wire)
  - G564000DA (Deep access fine wire)
  - G566000 (heavy wire)
  - G566000HR (heavy ribbon)

- **Monitor**
  19" flat screen

- **Microscope**
  Stereo zoom with adjustable work position and light intensity

- **Mains supply**
  Single phase, 200 to 240 V, -5%, +10%, 50 to 60 Hz,
  100 V to 120 V, -5%, +10% optional

- **Power consumption**
  0.6 kVA minimum, 3.2 kVA maximum

- **Compressed air**
  5 bar to 8 bar

- **Vacuum**
  Minimum < -0,8 bar

- **Positioning accuracy**
  Repeatability
  +/- 5 µm @ 3 Sigma

- **Ultrasonomics**
  Digital generator
  30 kHz to 250 kHz

- **Transducer**
  40 kHz to 145 kHz

- **Wire de-spooler**
  Fully automatic

- **Machine control**
  Compact PCI, UNIX based, real-time capable, multi-tasking operating system

- **Pattern Recognition**
  Moving CCD camera
  (better than 0.1 pixel resolution),
  Cognex® 8000 (Pat Max, Pat Quick)

- **Lighting**
  Type and intensity programme controlled, red LED with other colours optional

- **Traceability**
  Optional standard export
  of up to 336 quality data per wire

- **Networking**
  TCP/IP, Ethernet, SECS/GEM