Biwin
Storage Technology

TGS201 Industrial SATA SSD

BIWIN TGS201 SSD is designed and built for industrial applications, integrating industrial-grade controllers and TLC NAND flash technology. It is widely used in industrial control, rail transportation, data communication, and other fields, and is compatible with critical equipment such as automation devices, metro gate systems, and communication base stations.

The TGS201 SSD features a 2.5" form factor and strictly adheres to the SATA III standard, delivering high-speed performance with sequential read and write speeds up to 560 MB/s and 510 MB/s. Available in capacities from 128 GB to 2 TB, it meets the industry's diverse storage needs. An operating temperature range of -40°C to +85°C ensures stable performance in extreme environments.

For outstanding reliability and safety, the TGS201 SSD has undergone rigorous testing, including "Double 85" (85°C high temperature and 85% high humidity) test, rapid temperature cycling (10°C/min), high/low-temperature stress testing, and anti-sulfuration G3 standard. The SSD is equipped with power-loss protection, safeguarding data against damage from unexpected power outages. Customization options, including conformal coating, sidefill/underfill and anti-sulfuration, offer additional solutions to enhance reliability and durability in harsh environments.

Key Features

Stable Wide-Temperature Operation from -40°C to +85°C

The BIWIN TGS201 SSD ensures reliable operation in extreme conditions via advanced selection mechanisms which guarantee the flash memory, controller, and components support a wide temperature range of -40°C to +85°C. Coupled with BIWIN's proprietary firmware enhancement strategy, this ensures stable performance despite challenging climates and harsh industrial environments.

Dual Power-Loss Protection for Exceptional Stability

Supporting both firmware and hardware-based power-loss protection, the BIWIN TGS201 SSD brings power stability even during unexpected power failures, allowing additional time for volatile data storage and effectively addressing various power-loss scenarios.

Advanced Technologies to Extend Product Lifespan

The BIWIN TGS201 SSD incorporates technologies such as dynamic/static wear leveling, bad block management, TRIM, and garbage collection, ensuring optimal utilization of NAND Flash and significantly enhancing the product's durability.

Rigorous Testing for Exceptional Quality

For outstanding reliability, the BIWIN TGS201 SSD undergoes extensive testing, including "Double 85" (85°C high temperature and 85% high humidity test), rapid temperature cycling (10°C/min), high/low-temperature stress testing, and anti-sulfuration G3 standard, with an MTBF (Mean Time Between Failures) exceeding 3 million hours.

Flexible Customization to Meet Specialized Application Needs

The BIWIN TGS201 SATA III SSD offers various customization options, including conformal coating, sidefill/underfill, anti-sulfuration, and metal/graphene heatsinks, providing comprehensive choices for solutions which meet specific customer requirements and significantly improve reliability and durability.

Technologies

Power-Loss Protection	S.M.A.R.T.	Firmware Update	End-to-End Data Protection	Data Erasure
Garbage Collection	Dynamic/Static Wear Leveling	TRIM Command	Bad Block Management	Intelligent Thermal Throttling

Applications

Network Communications

Industrial Automation

Security Surveillance

Intelligent Transportation

Smart Energy

Specifications

Model Name	TGS201
Interface	SATA III
Form Factor	2.5” SATA
Flash Type	3D TLC
Firmware	TLC Direct Write
DRAM Cache	DRAM-less
Capacity	128 GB / 256 GB / 512 GB / 1 TB / 2 TB
Sequential Read (Up to)	560 MB/s
Sequential Write (Up to)	510 MB/s
Random Read 4K (Up to)	90K IOPS
Random Write 4K (Up to)	70K IOPS
Read Power Consumption (Max.)	0.85 W
Write Power Consumption (Max.)	1.4 W
Idle Power Consumption (Max.)	0.3 W
Dimensions	100.00 x 69.85 x 6.70 mm
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +95°C
Endurance	3000 P/E cycles
MTBF	>3,000,000 hours
Certifications	CE, FCC, RoHS
TBW (Up to)	2400 TBW

Order Information

Capacity	Part Number	Power Loss Protection
128 GB	TG25B12820Y0TP0	Firmware + Hardware-Based
256 GB	TG25B25620Y0TP0	Firmware + Hardware-Based
512 GB	TG25B51220Y0TP0	Firmware + Hardware-Based
1 TB	TG25B1T220Y0TP0	Firmware + Hardware-Based
2 TB	TG25B2T220Y0TP0	Firmware + Hardware-Based

1. Tested by BIWIN labs. Actual performance may vary due to systems, devices, or environment.
2. Maintenance and future updates are required throughout the product lifecycle. Specifications are subject to change without notice.
3. The pictures are for illustration only. Actual products may vary due to product enhancements or changes.
4. Not all products are sold in all regions of the world.
5. As used for storage capacity, one megabyte (MB)= one million bytes, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on the operating environment. As used for buffer or cache, one megabyte (MB) = 1,048,576 bytes. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabyte per second (GB/s) = one billion bytes per second.
6. MTBF = Mean Time Between Failures based on internal testing using the Telcordia stress testing standard.
7. Please visit www.biwintechnology.com for warranty details in your region.
8. For more information, please contact sales@biwintech.com.

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